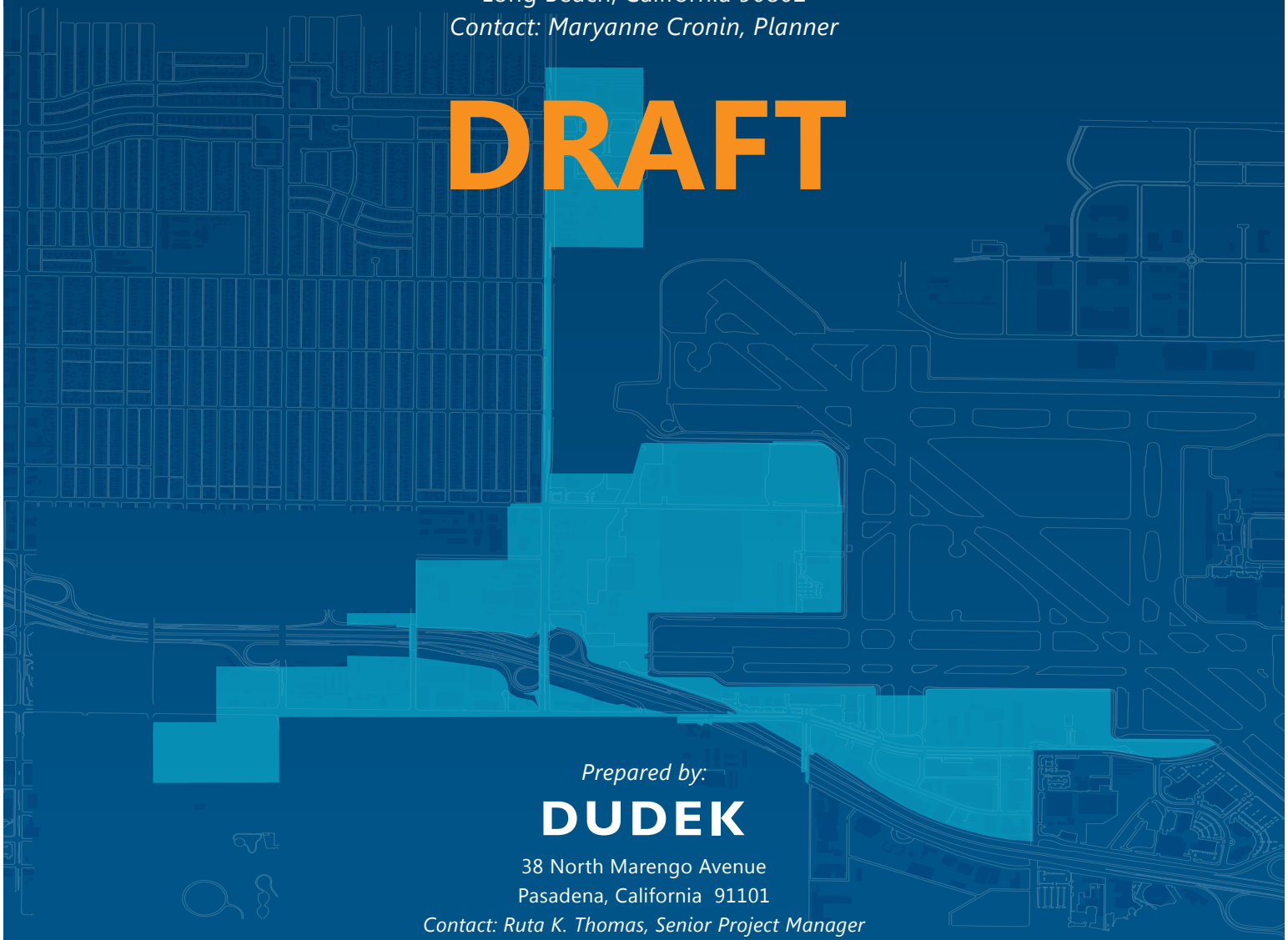
CITY OF LONG BEACH

Globemaster Corridor Specific Plan Program EIR/EIS

Prepared for:

City of Long Beach
Development Services/Planning Bureau
411 West Ocean Boulevard, 3rd Floor
Long Beach, California 90802
Contact: Maryanne Cronin, Planner

DRAFT



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AUGUST, 2020

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
AAQS	ambient air quality standards
AB	Assembly Bill
ACHP	Advisory Council on Historic Preservation
ACM	asbestos-containing materials
ADU	Accessory Dwelling Unit
AELUP	Airport Environs Land Use Plan
AFY	acre-feet per year
AGL	above ground level
ALUC	Airport Land Use Commission
ALUP	Airport Land Use Plan
ANSI	American National Standards Institute
AP	Airport
AQMP	Air Quality management Plan
ASTM	American Society for Testing and Materials
BMP	Best Management Practices
BP	Business Park
CAAP	Climate Action and Adaptation Plan
CAAQS	California Ambient Air Quality Standards
CAC	Certified Asbestos Consultant
Cal/OSHA	California Occupational Safety and Health Administration
CalEPA	California Environmental Protection Agency
CAO	Cherry Avenue Overlay Zone
CAPCOA	California Air Pollution Control Officers Association
CAP	climate action plan
CARB	California Air Resources Board
CC	Community Commercial
CDPH	California Department of Public Health
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFC	California Fire Code
CH_4	methane
CHLD	California Heights Landmark District
CHNA	California Heights Neighborhood Association
CHRIS	California Historical Research Information System
CIRIS	City Inventory Reporting and Information System
CIWM	California Integrated Waste Management
CMP	Congestion Management Plan
CMTC	California Manufacturing Technology Center
CNEL	community noise equivalent level
CNG	compressed natural gas
CNMP	construction noise management plan

Acronym/Abbreviation	Definition
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	California's carbon dioxide
CPTED	Crime Prevention Through Environmental Design
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRRC	Cool Roof Rating Council
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
DI	ductile iron
DOF	California Department of Finance
DOGGR	Division of Oil, Gas, and Geothermal Resources
DPM	diesel particulate matter
DPR	Department of Parks and Recreation
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
ECR	Existing Conditions Report
EIA	Energy Information Administration
EIR	Environmental Impact Report
EISA	Energy Independence and Security Act of 2007
EMSI	Economic Modeling Specialists International
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
EV	electric vehicle
EVSE	electric vehicle supply equipment
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
FHWA	Federal Highway Administration
FLMPA	Federal Land Management and Policy Act
FTA	Federal Transit Administration
FTE	full time equivalent
FY	Fiscal Year
GC	Government Code
GCSP	Globemaster Corridor Specific Plan
GHG	greenhouse gas
GWP	global warming potential
HABS	Historic American Building Survey
HAP	hazardous air pollutants
HCM	Highway Capacity Manual
HFC	hydrofluorocarbon
HI	hazard index
HRI	Historic Resource Inventory

Acronym/Abbreviation	Definition
HVAC	Heating, Ventilation and Air Conditioning
HWMP	Hazardous Waste Management Plan
I-405	Interstate 405
IC	Industrial Commercial
ICU	Intersection Capacity Utilization
IFC	International Fire Code
IG	General Industrial
IL	Light Industrial
IPCC	Intergovernmental Panel on Climate Change
IQ	intelligence quotient
IS	Initial Study
ISTEA	Intermodal Surface Transportation Efficiency Act
ITE	Institute of Transportation Engineers
JWPCP	Joint Water Pollution Control Plant
LA	Los Angeles
LACFCD	Los Angeles County Flood Control District
LACSD	Los Angeles County Sanitation Districts
LBCC	Long Beach City College
LBER	Long Beach Energy Resources
LBFD	Long Beach Fire Department
LBGO	Long Beach Gas and Oil Department
LBHHS	Long Beach Department of Health and Human Services
LBMC	Long Beach Municipal Code
LBP	lead-based paints
LBPD	Long Beach Police Department
LBPL	Long Beach Public Library
LBWD	Long Beach Water District
LEA	local enforcement agency
LED	light emitting diodes
LEED	Leadership in Energy and Environmental Design
LID	Low Impact Development
LLG	Linscott, Law & Greenspan Engineers
LMC	Lakewood Municipal Code
LOS	level of service
LQHE	Limited Quantity Hauling Exemption
LSA	LSA Associates, Inc
LST	localized significance threshold
MICR	maximum individual cancer risk
MIL	Map and Imagery Laboratory
MLD	Most Likely Descendent
MMLOS	Multimodal Level of Service
MMRP	Mitigation Monitoring and Reporting Program
MOP	Mobility of People

Acronym/Abbreviation	Definition
MPO	Metropolitan Planning Organization
MRF	Material Recovery Facility
MVA	megavolt amperes
MWD	Metropolitan Water District of Southern California
MWDSC	Metropolitan Water District of Southern California
MWELO	Model Water Efficient Landscape Ordinance
MWMA	Medical Waste Management Act
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NESHAPS	National Emission Standards for Hazardous Air Pollutants
NETR	Nationwide Environmental Title Research LLC
NF_3	nitrogen trifluoride
NH_3	ammonia
NHTSA	National Highway Traffic Safety Administration
NO	nitric oxide
NO_2	nitrogen dioxide
NOP	Notice of Preparation
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NSLU	noise- and vibration-sensitive land uses
NSPS	Standards of Performance for New Stationary Sources
O_2	oxygen
O_3	ozone
OAP	Odor Abatement Plan
OCTA	Orange County Transit Authority
OEA	Office of Economic Adjustments
OHP	Office of Historic Preservation
OPR	Office of Planning and Research
OS	Open Space
PAH	polyaromatic hydrocarbon
PCB	polychlorinated biphenyls
PCE	Passenger Car Equivalent
PD	Planned Development
PEIR	Program Environmental Impact Report
PEIS	Program Environmental Impact Statement
PFC	perfluorocarbon
PM_{10}	particles less than 10 microns in diameter
$PM_{2.5}$	fine particulate matter
PPV	peak particle velocity
PW	Public Works

Acronym/Abbreviation	Definition
RCB	reinforced concrete box
RCP	reinforced concrete pipe
RDEIR	Recirculated Draft Environmental Impact Report
RFS	Renewable Fuel Standard
ROC	required obstacle clearance
ROD	Record of Decision
RPS	Renewables Portfolio Standard
RPZ	Runway Safety Zone Overlay Zone
RTP	Regional Transportation Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board
SAFE	Safer Affordable Fuel-Efficient
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAP	Sustainable City Action Plan
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCE	Southern California Edison
SCS	Sustainable Communities Strategy
SEASP	Southeast Area Specific Plan
SEER	Seasonal Energy Efficiency Ratio
SELAC	Southeast Los Angeles County
SENEL	Single Event Noise Exposure Level
SERRF	Southeast Resource Recovery Facility
SF	square feet
SF_6	sulfur hexafluoride
SHMC	Signal Hill Municipal Code
SHPO	State Historic Preservation Officer
SLCP	short-lived climate pollutant
SLF	Sacred Lands File
SLM	sound level meter
SO_2	sulfur dioxide
SO_X	sulfur oxides
SPL	sound pressure levels
SPR	Site Plan Review
SRA	Source-Receptor Area
SRI	solar reflective index
SRRE	Source Reduction and Recycling Element
ST	Survey Tag
SUSMP	Standard Urban Stormwater Mitigation Plan
SWAMP	Surface Water Ambient Monitoring Program

Acronym/Abbreviation	Definition
SWIS	Solid Waste Information System
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminants
TAZ	Traffic Analysis Zone
TCR	tribal cultural resource
TDM	Transportation Demand Management
TERPS	U.S. Standard for Terminal Instrument Procedures
TIA	Traffic Impact Analysis
TISG	Transportation Impact Study Guide
TMDL	Total Maximum Daily Load
TOD	Transit-Oriented Development
TRU	Transport refrigeration unit
USAR	U.S. Army Reserve
UWMP	Urban Water Management Plan
V/C	volume to capacity
VCP	vitrified clay pipe
VFR	visual flight rules
VHFHSZ	very high fire hazard severity zone
VMT	vehicle miles traveled
VOC	volatile organic compound
WDR	Waste Discharge Requirement
WRCC	Western Regional Climate Center
WSAP	Water Supply Allocation Plan
WUCOLS	Water Use Classification of Landscape Species
ZNE	zero net energy

EXECUTIVE SUMMARY

This section provides a summary of the Draft Program Environmental Impact Report (PEIR) and Program Environmental Impact Statement (PEIS) for the Globemaster Corridor Specific Plan (GCSP; Proposed Project). This section provides a summary of the Proposed Project, areas of known controversy and issues to be resolved, a summary of Proposed Project alternatives, and a summary of all Project impacts, associated mitigation measures, and ultimate level of significance after mitigation is applied.

ES.1 INTRODUCTION

This PEIR/PEIS has been prepared by the City of Long Beach (City) to evaluate the potential environmental effects that would result from development of the Proposed Project. This PEIR has been prepared in conformance with the California Environmental Quality Act of 1970 (CEQA) statutes (Cal. Pub. Res. Code, Section 21000 et. seq., as amended) and implementing guidelines (Cal. Code Regs., Title 14, Section 15000 et. seq.). The City is the lead agency under CEQA.

In anticipation of the C-17 Site closure and the potential effects the closure would have on the City and its surroundings, the City applied for and was awarded a grant from the United States Department of Defense (DoD) Office of Economic Adjustments (OEA) to prepare and implement the Boeing C-17 Transition Program. Federally funded projects must follow the procedural requirements of the National Environmental Policy Act (Title 42 of the United States Code [U.S.C.] § 4321 et seq: "NEPA"). As such, this PEIS has been prepared in conformance with the National Environmental Policy Act.

This PEIR/PEIS will be used by the City in conjunction with other information developed in the City's process to implement the Proposed Project. After the Final PEIR/PEIS is completed and certified, the City will make a final decision on the GCSP. The City will consider the final environmental documentation, along with other issues, during preparation of the decision on the Proposed Project. Following adoption of the Final PEIR/PEIS, the DoD would consider the adoption of the document as a means of satisfying NEPA requirements.

ES.2 PROJECT LOCATION AND SETTING

The GCSP area (Plan Area) is located in the central portion of the City of Long Beach, bordering the Long Beach Airport to the west and south, and the cities of Lakewood and Signal Hill to the north and south, respectively. The Plan Area is approximately three miles northeast of downtown Long Beach. The Port of Long Beach, the second busiest port in the United States and a twin of the number one busiest port of Los Angeles, is located eight miles south and is also owned and operated by the City. The Plan Area is afforded direct access from Interstate 405 (I-405) via Cherry Avenue, providing easy access and high visibility to the area from a regional standpoint.

The Plan Area totals approximately 437 acres. Cherry Avenue and Spring Street form its central unifying spines. The historic California Heights Historic District and the Bixby Knolls neighborhood are located to the west of Cherry Avenue. To the east of the Plan Area on the opposite site of the airport is the Skylinks Golf Course, and the Long Beach City College (LBCC) Liberal Arts Campus.

The Plan Area and surrounding area is characterized as a developed urban area comprised of commercial, industrial, and residential uses. The most prominent land use adjacent to the Plan Area is the Long Beach Airport, which is generally located east of the Plan Area. The Plan Area is highly disturbed and consists primarily of commercial and industrial uses with some vegetation and small amounts of unpaved areas.

The Plan Area consists of a variety of low- to mid-rise commercial and industrial uses. Land uses are supported by a streetscape context largely auto-oriented in nature, and lacking in street trees and other pedestrian amenities.

ES.3 PROJECT DESCRIPTION

The Proposed Project involves implementation of the GCSP, which serves as a planning and regulatory framework for the Plan Area. The GCSP would guide land uses for the approximately 437-acre Plan Area and allow development within this Plan Area as defined in the GCSP. The GCSP creates a policy framework for the development and improvement of the Plan Area into an employment district in an area adjacent to the Long Beach Airport, Port of Long Beach, I-405 freeway, and surrounding residential and business community. Key components of the GCSP include:

- **Summary.** This chapter provides a brief background and overview of the GCSP, and serves as a quick reference and summary of each chapter contained in the GCSP.
- **Context.** This chapter describes the location, history, and existing conditions of the Plan Area, along with a summary of community workshop meetings.
- **Vision and Goals.** This chapter describes the vision for the overall plan, as well as the goals and policies.
- **Land Use and Mobility.** This chapter describes recommended land use and transportation improvements to the Plan Area and its vicinity. It includes a street network plan and associated cross sections, and identifies bicycle and pedestrian facilities, and nearby transit. The chapter also describes the application of six development districts and two overlay zones proposed as part of the GCSP:
    - **Business Park (BP)** district is intended as a campus-style district that supports a range of employment uses, including professional office, research and development, light industrial, high cube warehousing and aviation-related uses. Warehousing uses shall be

high-turnover and employment-generating warehousing subject to the authority of the Zoning Administrator to determine what constitutes a "high-turnover and employment-generating warehouse." Development regulations are designed to achieve high-quality mid-rise structures served by a system of pedestrian pathways, passive and active open space areas, and amenities in a campus-style environment.

- **Community Commercial (CC)** district supports medium-scale retail, hotel, and service uses intended to serve the entire community, including convenience and comparison shopping goods and associated services. Development regulations are designed to achieve a pedestrian-friendly environment where buildings face the sidewalk at the immediate intersections, and where mid-corridor streetscape enhancements provide a more inviting walking environment.
- **Industrial Commercial (IC)** district supports a mix of auto-oriented commercial and light industrial uses, including research and development, flex space, warehousing, and small-scale incubator industries, as well as community-serving commercial uses. Land uses are designed to operate entirely within enclosed structures, which pose limited potential for environmental impacts on neighboring uses with respect to noise, hazardous materials, odors, dust, light, glare, traffic, air emissions, and hours of operation. It is anticipated that buildings housing these uses will be within low-scale, adaptively reused structures or part of modern industrial complexes in campus-like settings. Development regulations are designed to address the streetscape to achieve a more inviting walking environment.
- **General Industrial (IG)** is preserved for traditionally heavy industrial and manufacturing uses such as large construction yards with heavy equipment, chemical manufacturing plants, and food processing plants. The buildings that house these operations may be older industrial buildings retrofitted to accommodate the use or new state-of-the-art manufacturing plants. The focus of the IG district is on the operating characteristics of the use, rather than the particular product created. Development regulations are designed to provide adequate parking and address the streetscape to achieve a more inviting walking environment.
- **Airport (AP)** district is reserved for property that is part of the designated airfield of the Long Beach Airport, and adjacent properties under Airport control. The Federal Aviation Administration (FAA) requires these areas to remain available for aviation operations and aviation-related uses. The property in the Airport district is managed by the Airport Department of the City of Long Beach. Land use and development standards reflect this aviation focus and are intended to accommodate any aviation-related uses approved by the Airport Department.

This district in the GCSP is created to unify the land use regulations for the western and southern areas of the Long Beach Airport and is intended to serve as a model for the future adoption of an airport zoning district into Title 21 (Zoning Regulations), LBMC, or adoption of a specific plan for the airport, either of which will cover the entire extent of the Long Beach Airport. At the time of the creation of the GCSP, land use at the Long Beach Airport was regulated through a mix of the IG (General Industrial) zoning district, and several Planned Development (PD) Districts, including PDs for the Long Beach Airport Terminal (PD-12), the Atlantic Aviation Center (PD-13), and Douglas Aircraft (PD-19). The GCSP replaces the western area of PD-19 (leaving the eastern area, which is east of Lakewood Boulevard, as-is) and absorbs all of PD-13, as well as the IG zone on the airport property within the extent of the Plan Area.

  - **Open Space (OS)** district is established to preserve the designated open space area at the southeast corner of Spring Street and California Avenue within the Plan Area. This district is intended to be used for active and passive public use, including for recreational, cultural, and community service activities that provide physical and psychological relief from the intense urban development of the Plan Area.
  - **Cherry Avenue Overlay Zone (CAO)** is intended to allow complementary retail and restaurant amenities supportive of the underlying BP district and adjacent neighborhoods. Development standards are designed to ensure that new uses are pedestrian-oriented and address Cherry Avenue either as stand-alone buildings or integrated with new business-park or modern industrial complexes in a campus-style setting.

- **Airport Environs Overlay Zone (AEOZ)** encompasses the entire Specific Plan area. It is intended to ensure that future land uses within the plan area are compatible with airport operations with respect to noise, safety and airspace protection. The AEOZ includes the areas within: 1) the airport's 65 and 70 decibels (dB) Community Noise Equivalent Level (CNEL) contours; 2) the six safety compatibility zones applicable to each airport runway where heightened risk levels may warrant restrictions on land use development; and 3) the airspace protection surfaces that define the airport's airspace, including FAA Part 77 and TERPS surfaces. Each of these areas are mapped and addressed in detail in Section 2.3.2, Airport Compatibility, and again in Section 5.5, Development Regulations. The information pertaining to this Overlay Zone is informational only. Final authority and land use jurisdiction rests with the City, with the Federal Aviation Administration (FAA) serving as an advisory body with respect to land use and height. The City however intends to comply with all FAA airport land use planning guidelines in this plan, as well as Caltrans and County guidelines and regulations

- **Land Use and Development Regulations.** This chapter provides development standards (building height, community benefits, setbacks, open space, parking, and adaptive reuse) and permitted uses within each development district and overlay zone.
- **Urban Design Guidelines.** This chapter describes the building design standards (massing, articulation, materials, openings, landscape, screening, signage, etc.).
- **Infrastructure Systems.** This chapter discusses the proposed distribution, location, and extent of the utilities infrastructure (water, wastewater, stormwater, gas, and electric), and other essential facilities proposed to be located within the Plan Area.
- **Implementation and Administration.** This chapter discusses the general administration, review and approval process, actions for implementation of the GCSP, and a description of strategies for funding these improvements. The GCSP is the regulatory document guiding land use and development within the boundaries identified in the GCSP. Upon adoption by ordinance, the GCSP will serve as the zoning document for the properties within the Plan Area.

Development Potential

The Development Potential compares the range of buildout development anticipated under the GCSP to existing development and the market projections prepared at the outset of the planning process. The market projections reflect employment and development trends for the South Los Angeles (LA) County market area and the estimated market capture rate of the Plan Area in relation to other job centers in the area.

Table ES-1, Development Potential (Square Feet), summarizes the development potential for each land use district, compared to existing land uses and the 10-20 year market demand.

Table ES-1
Development Potential

GCSP Land Use	GCSP Development Potential (square feet)	Market Demand Plus Existing Development	
		10 years	*20 years*
Office	1,872,602	843,862	1,551,062
Medical Office	146,095	43,063	104,229
R&D	234,651	11,398	22,797
Manufacturing	1,131,139	1,678,645	1,839,645
Light Industrial/Warehousing	4,455,892	3,088,389	4,703,389
Retail	795,457	601,205	821,032
Restaurant	107,623	133,351	241,624
Hotel	162,944	200,000	400,000
Total	**8,906,403**	**6,599,913**	**9,683,778**

The total development potential for the Plan Area is 8,906,403 square feet.

Mobility Plan

New Streets

The GCSP involves the implementation of new streets and pedestrian connectors, which would be installed by developers incrementally as parcels are developed. Streets within the GCSP are divided into four street classifications and a pathway system: Major Avenue, Minor Avenue, Neighborhood Connector, Local Street, and Pedestrian Connection. Street classifications are consistent with the General Plan Mobility Element. The Pedestrian Connection typology represents pathways providing pedestrian/bicycle access through parcels. New streets and pedestrian connections break down large blocks to enhance mobility and accessibility for all travel modes.

New Neighborhood Connector streets continue 36th Street and 32nd Street east of Cherry Avenue, forming an outer loop around the central core area with Cherry Avenue and Globemaster Way. New Local Streets extend 33rd Street east of Cherry Avenue and create new north/south mid-block connectors east and west of Cherry Avenue in both the central core and southwestern portions of the Plan Area. New pedestrian connections create internal pedestrian/bicycle pathways that further strengthen accessibility and mobility through and between parcels. Combined improvements achieve an integrated and multi-modal mobility system supportive of the land use districts.

The location of new streets and pedestrian connections are conceptual and designed to maximize the accessibility and connectivity for active transportation modes. Actual locations may deviate from those shown, provided the original intent is maintained. The actual locations will be determined as developments are proposed and shall be approved by the Director of Public Works and the Director of Development Services.

Street Improvements

Improvements to existing streets and the design of new streets are important aspects of the GCSP. Bicycle facilities are proposed for Cherry Avenue, Wardlow Road, and all new streets in the Plan Area to help improve connectivity within the Plan Area and connect to existing bicycle infrastructure within the vicinity of the Plan Area, strengthening Long Beach's commitment to be the nation's most bicycle-friendly city.

Pedestrian improvements are also proposed for Cherry Avenue, Wardlow Road, and all new streets within the Plan Area to help ensure a continuous network of sidewalks and shaded parkways to facilitate and encourage walking through and to/from the Plan Area.

The following provides a description of the types of improvements planned for Cherry Avenue, Wardlow Road, and new streets within the plan area, including new pedestrian connections:

- **Cherry Avenue**: The new street section for Cherry Avenue removes on-street parking on both sides and provides a new 11' 6" Class IV separated bikeway on both sides of Cherry Avenue. A curb, pole, planter, or striping will be placed to separate cyclists from traffic between the new bikeway and the street. A landscaped parkway is also incorporated into the pedestrian right-of-way to beautify and provide shade for pedestrians and cyclists.
- **Wardlow Road**: The new street section for Wardlow Road reduces the width of the two through lanes from 14 feet and 10 feet to 11 feet and 10 feet, to add a raised Class VI bike lane. A landscaped parkway is also incorporated into the pedestrian right-of-way to beautify and provide shade for pedestrians and cyclists.
- **New Neighborhood Connector Streets**: The new street section for the Neighborhood Connector classification provides three through lanes instead of four to accommodate a parking lane and landscaped parkway on one side of the street and a Class II bike lane on the other side of the street. These improvements to the Neighborhood Connector classification for new streets will facilitate access around the central core area and improve the experience and accessibility to the central core from Cherry Avenue for both pedestrians and cyclists.
- **New Local Streets**: The new street section for the Local Street classification converts through lanes to through/Class III bike lanes (i.e., signs or sharrows) and provides a landscaped parkway on both sides of the street. Alternative parking configurations (i.e., parallel or diagonal) are also possible and provide flexibility in the design of new Local Streets. Improvements to the Local Street classification will enhance the experience and accessibility for both cyclists and pedestrians to sites within the Plan Area.
- **New Pedestrian Connections**: The design of pedestrian connections are flexible; however, new pathways should be flanked by landscaping to beautify and provide on-site shading.

It is important to note that similar improvements could be extended to other existing streets within the GCSP as determined necessary by the City and included in the design and specifications for the ultimate roadway improvements

ES.4 STATEMENT OF PURPOSE AND NEED FOR THE PROPOSED PROJECT

In 2013, Boeing Corporation announced it would end production of the C-17 Globemaster III military aircraft, causing the closure of the C-17 Site in the City of Long Beach. This closure resulted in the layoff of approximately 1,600 workers and caused additional economic impacts across the supply chain. In addition to the manufacturing, engineering, and project

management jobs within the aerospace/defense sector, other job losses within the service realm will occur. Further, the C-17 Site closures leaves vacant a distinctive site, which includes a 1.2 million square foot enclosed production space adjacent to the Long Beach Airport. To address these impacts, the City has undertaken the C-17 Master Plan to provide economic development planning, land use and infrastructure planning, and assistance to impacted firms and workers. As the results of the C-17 Transition Master Plan revealed the need for comprehensive planning that addressed land use, economic development, and infrastructure improvements in the Plan Area, the City determined that a Specific Plan was the appropriate tool to approach each need holistically. The GSCP meets the City's needs for a comprehensive planning tool to guide land use and infrastructure improvements to enhance the economic functionality of the Plan Area, following the C-17 Site closure.

The purpose of the GCSP is to provide the planning and regulatory framework for guiding future development and attracting quality jobs to the 483-acre Plan Area. The vision of the GCSP is to serve as a 21st Century innovation employment district. Building on the legacy of the Boeing aircraft manufacturing industry and the high-quality jobs it provided, the Plan Area will continue to attract and optimize new work opportunities to retain the regional skills base, expertise and competitive economies of Long Beach Airport, the City of Long Beach, and the Southern California region. The land use districts proposed within the GCSP are intended to create a flexible, commercial, industrial, and mixed-use district. In addition, the strategic implementation and administration framework will foster pedestrian, bicycle and transit mobility, improve connectivity, provide open space and amenities, and enhance the design and functionality of the workforce environment. The GCSP will become a destination where leading-edge firms come to leverage its locational advantage adjacent to Long Beach Airport, the Port of Long Beach, I-405 freeway, and a thriving residential and business community.

ES.5 PROJECT OBJECTIVES

Section 15124(b) of the State CEQA Guidelines requires a project description to contain a statement of a project's objectives and Section 15124(b) requires that the statement of objectives includes the underlying purpose of the project. Section 15012.13 of NEPA requires that the environmental statement briefly specify the underlying purpose and need to which the agency is responding in proposing the proposed action. The applicant's objectives for the Proposed Project include:

- **Create a 21st Century Employment District that Fosters Innovation:** The workforce of the 21st century is seeking places that integrate jobs into active urban lifestyles. The GCSP will guide development and infrastructure investments to integrate business park, industrial, and commercial uses with supporting amenities in a flexible, commercial and industrial, multi-modal and sustainable campus-style environment. This will include breaking down the superblocks into a grid of walkable and bikeable streets and introducing

sustainable and thoughtfully designed buildings, sites, open spaces and streetscapes. This goal also recognizes that while innovation has a spatial component (i.e., dynamic clusters of people working together are the source of social and technological breakthroughs), maintaining affordability through adaptive reuse of existing buildings to create small-scale, low-rent, urban environments are important to attract and retain innovators.

- **Stimulate Economic Development and Job Growth:** A principal driver of the GCSP is to stimulate economic growth and attract businesses that replenish high-quality jobs lost from the closure of the former Boeing C-17 manufacturing plant. This will require a level of effort that extends beyond the controls of a land use plan, development standards, and implementing mechanisms found within the pages of the GCSP. Attracting key anchor tenants will rely on a coordinated effort between City staff, independent brokers, politicians, and the right mix of incentives to drive private investment to the district.
- **Cultivate the Existing Human Capital of Long Beach:** Human capital refers to the knowledge, skill sets, and motivation people have, which provide economic value. Human capital is directly related to economic growth as it can help to develop an economy through the knowledge and skills of people. Human capital realizes not everyone has the same skill sets or knowledge and that quality of work can be improved by investing in people's education. In addition to attracting quality businesses, investing in Long Beach's human capital and proactively connecting residents, and in particular former Boeing employees, with new job opportunities in the district, is an important goal of the GCSP.
- **Establish Cherry Avenue as a Multi-Modal Unifying Corridor:** Cherry Avenue is a central unifying backbone for the GCSP and provides key gateways to the district at its intersection with Carson Avenue and Spring Street. The corridor is well-located for future success based on its high visibility, regional accessibility, traffic counts, and proximity to flanking neighborhoods and businesses. The GCSP will guide the development of Cherry Avenue to become an economically thriving corridor with business and commercial infill development strategies that bring neighborhood and business-serving commercial uses, as well as employment opportunities within walking distance of existing neighborhoods. Cherry Avenue will also be improved as a street that enables active transportation, calms traffic, and creates a new identity for the district. Improving the "front door" of the GCSP by both incremental and comprehensive changes to Cherry Avenue will strengthen the economic, environmental, and visual performance of the district as a whole.
- **Increase Mobility Choices Throughout the Globemaster Corridor District:** Multiple transportation options can broaden the benefits of innovation to the City at large. For an innovation district, solid multimodal transportation means district employees have a greater choice of residence and lifestyle options. Connections between local transportation networks and regional or global transportation can also give a district a competitive edge. The GCSP will leverage its local, regional, and global transportation connections by

enhancing internal connectivity and increasing mobility options within and to/from the Plan Area. Improvements will be focused on connectivity and accessibility for active transportation modes and shared mobility.

ES.6 AREAS OF CONTROVERSY/ISSUES TO BE RESOLVED

A Notice of Preparation for this PEIR was released on September 12, 2018, beginning the 30-day public scoping period for the PEIR/PEIS. During the public scoping period, input is obtained from public agencies and the general public regarding the environmental issues and concerns that may potentially result from the Proposed Project. The City received 13 comment letters in response to the Notice of Preparation, and 4 scoping meeting comment cards. The scoping meeting for the PEIR/PEIS was held on September 26, 2018. Copies of these comment letters are provided in Appendix A-3, Notice of Preparation Comment Letters, of this PEIR/PEIS. The primary areas of controversy identified by the public and agencies included the following potential issues (the PEIR/PEIS section that addresses the issue raised is provided in parentheses):

- Potential historic impacts to the California Heights Historic District (Section 3.3, Cultural Resources)
- Potential noise impacts from increase in traffic (Section 3.8, Noise)
- Potential traffic impacts resulting from implementation of the Proposed Project, and safety impacts to pedestrians and bicyclists (Section 3.11, Transportation and Circulation)

With respect to the Proposed Project, the key issues to be resolved include decisions by the City, as lead agency, as to the following:

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

ES.7 SUMMARY OF ENVIRONMENTAL IMPACTS

This PEIR/PEIS has been prepared to assess the potentially significant effects on the environment that could result from implementation of the Proposed Project. For a detailed discussion regarding potential significant impacts, please see Chapter 3.0, Environmental Analysis, of this PEIR/PEIS.

A summary of the Proposed Project's impacts is provided in Table ES-3, Summary of Project Impacts, below. Also provided in Table ES-3 is a list of the proposed mitigation measures that are recommended in response to the potentially significant impacts identified in the PEIR/PEIS, as well as a determination of the level of significance of the impacts after implementation of the recommended mitigation measures.

ES.8 ALTERNATIVES TO THE PROPOSED PROJECT

State CEQA Guidelines Section 15126.6 and NEPA (40 CFR Sec. 1505.1(e)) require consideration and analysis of a range of alternatives to the Proposed Project in an EIR. Two alternatives are reviewed in Chapter 4.0 of this PEIR/PEIS and are summarized below.

Alternative 1 – No Project Alternative

A No Project Alternative is included in this analysis to meet the CEQA requirements in Section 15126.6(e) and NEPA requirement in CFR 1502.14(d). Alternative 1 assumes that the environmental conditions of the Plan Area at the time that the Notice of Preparation was released (September 2018). As such, under Alternative 1, the existing uses within the Plan Area would continue to function as they currently do into the foreseeable future. As stated in Section 15126.6(e)(2) of the State CEQA Guidelines, the lead agency is required to examine conditions that are reasonably expected to occur in the foreseeable future if the Proposed Project were not approved. The "no project" alternative assumes continuation of the existing plan, policy, or operation into the future. Therefore, redevelopment within the Plan Area would continue to occur under the guidance of the existing General Plan and zoning regulations. Pursuant to State CEQA Guidelines Section 15126.6, where a project is the revision of an existing regulatory plan, the "no project" alternative assumes continuation of the existing plan, policy, or operation into the future. Therefore, redevelopment within the Plan Area would continue occur under the guidance of the existing General Plan and zoning regulations.

The Plan Area consists of the following zoning areas: Douglas Aircraft Planned Development District (PD-19), IG (General Industrial), IL (Light Industrial), IM (Medium Industrial), IL (Light Industrial), CHW (Regional Highway Commercial), CS (Commercial Storage), CCA (Community Commercial Automobile-Oriented), R-1-N (Single-Family Residential, standard lot), P (Park), I (Institutional), and PD-13 (Atlantic Aviation Center Planned Development District). The majority of the Plan Area is built-out; however, redevelopment that is consistent with the applicable designation could result in an increase in intensity.

Alternative 2 – Reduced Project Alternative

Alternative 2 would allow for the same proposed land use designations within the GCSP. However, Alternative 2 represents a Reduced Project Alternative by reducing the development potential from 8,906,403 square feet to 5,245,331 square feet. A comparison of the overall buildout summaries under Alternative 3 and the Proposed Project is provided in Table ES-2.

Table ES-2
Development Potential Comparison

Land Uses	Development Potential (square feet)	
	Alternative 3	*Proposed Project*
General Office	1,502,134	1,872,602
Medical Office	53,016	146,095
R&D	212,065	234,651
Manufacturing	2,397,684	1,131,139
Light Industrial/Warehousing	600,669	4,455,892
Retail	371,763	795,457
Restaurant	17,000	107,623
Hotel	91,000	162,944
Total	**5,245,331**	**8,906,403**

Environmentally Superior Alternative

An EIR must identify an "environmentally superior" alternative; and, where the no project alternative is environmentally superior, the EIR is then required to identify an alternative from among the others evaluated as environmentally superior (14 CCR 15126.6(e)(2)). NEPA also requires that in cases where an EIS is prepared, the Record of Decision must specify the alternative or alternatives which were found to be environmentally preferable to the biological and physical environment and that will promote the national environmental policy as expressed in NEPA's Section 101 (40 CFR 1505.2(b)). In this document, the term "environmentally superior" is used to satisfy both CEQA and NEPA requirements.

With respect to identifying an Environmentally Superior Alternative among those analyzed in this EIR, the range of feasible Alternatives includes: Alternative 1, No Project Alternative and Alternative 2, Reduced Project Alternative. A comparative summary of the environmental impacts associated with each alternative is provided in Table 4-2, Comparison of Impacts (see Chapter 4.0, Alternatives).

The No Project Alternative would be the environmentally superior alternative, as it would result in no new environmental impacts and would avoid the Proposed Project's significant and unavoidable impacts related to air quality and transportation and traffic. Although the No Project Alternative would result in a greater number in reduced impacts, Section 15126.6(e)(2) of the CEQA Guidelines indicates that if the environmentally superior alternative is the no project alternative, the EIR shall also identify another environmentally superior alternative among the other alternatives.

The remaining alternative, Alternative 2, was reviewed in accordance with the State CEQA Guidelines requirements. Alternative 2 would lessen the significant and unavoidable impacts

related to air quality, cultural resources, GHG emissions, and transportation and traffic; however, impacts related to air quality, cultural resources, and GHG emissions would remain significant and unavoidable. Additionally, Alternative 1, would not result in the creation of a planning and regulatory framework, to address economic impacts of the C-17 site closure, and thus, would not fulfill the purpose and need for the Proposed Project. Additionally, none of Proposed Project objectives would be achieved under Alternative 1. Comparatively, Alternative 2 would implement a strategic framework to address the economic impacts associated with the C-17 Site closure, and thus, would fulfill the purpose and need for the Proposed Project. Additionally, Alternative 2 would help meet most of the objectives identified for the Proposed Project. Therefore, the environmentally superior alternative is Alternative 2.

Preferred Alternative

Under NEPA implementing regulation 40 CFR Section 1502.14(e), the lead agency is required to identify the agency's preferred alternative in the Draft EIS if a preferred alternative is known at the time of the Draft EIS. Pending public comment on the Draft PEIR/PEIS, the City's preferred alternative at the time of the Draft EIS is the Proposed Project. The identification of a preferred alternative does not constitute a commitment or decision, and there is no requirement to select the preferred alternative in the record of decision. The identification of the preferred alternative may change between a Draft PEIR/PEIS and Final PEIR/PEIS. Various parts of separate alternatives that are analyzed in the Draft can also be "mixed and matched" to develop a complete alternative in the Final EIS as long as the reasons for doing so are explained. Selection in the record of decision of an alternative other than the preferred alternative does not require preparation of a supplemental EIS.

Table ES-3
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
Aesthetics			
a. Would the project have a substantial adverse effect on a scenic vista?	Less than significant/ No adverse effects	None	Less than significant/ No adverse effects
b. Would the project substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	N/A	N/A	N/A
c. Would the project substantially degrade the existing visual character or quality of the site and its surroundings?	Less than significant/ No adverse effects	None	Less than significant/ No adverse effects
d. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	Potentially significant	**MM-AES-1: Lighting Plans and Specifications.** Prior to the issuance of building permits for new development projects, the applicant shall submit lighting plans and specifications for all exterior lighting fixtures, light standards, and window treatments (e.g., consideration of specialized manicuring or tinting to reduce glare from interior lighting) to the City of Long Beach's Development Services Department for review and approval. The plans shall include a photometric design study demonstrating that all outdoor light fixtures to be installed are designed or located in a manner as to contain the direct rays from the lights on site and to minimize spillover of light onto surrounding properties or roadways. All parking structure lighting shall be shielded and directed away from residential uses. Open space areas are encouraged in the Plan. Lighting for such features shall be designed so that light is directed so as to provide adequate security and minimal spill-over or nuisance lighting.	Less than significant/ No adverse effects

Table ES-3
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		MM-AES-2: Light Fixture Shielding. Prior to the issuance of building permits for development projects within the Globemaster Corridor Specific Plan area, applicants shall demonstrate to the City of Long Beach's Development Services Department that all nighttime lighting installed on private property within the Globemaster Corridor Specific Plan area shall be shielded, directed away from residential and other light-sensitive uses, and confined to the Plan Area. Rooftop lighting, security lighting, or aviation warning lights, shall be in accordance with Airport/Federal Aviation Administration (FAA) requirements. Additionally, all lighting shall comply with all applicable Airport Land Use Plan (ALUP) Safety Policies and FAA regulations.	
Would the project have a cumulative aesthetic and/or lighting impact?	Potentially significant	**MM-AES-1** **MM-AES-2**	Less than significant/ No adverse effects
Air Quality			
a. Would the project conflict with or obstruct implementation of the applicable air quality plan?	Potentially significant	**MM-AQ-1: Construction Equipment Emissions Reductions**. The following measures shall be incorporated into the Proposed Project to reduce construction criteria air pollutant emissions, including VOC, NO_x, PM_{10}, and $PM_{2.5}$, generated by construction equipment used for future development projects implemented under the proposed GCSP: a) For off-road equipment with engines rated at 50 horsepower or greater, no construction equipment shall be used that is less than Tier 4 Interim. An exemption from these requirements may be granted by the City in the event that the applicant documents that equipment with the required tier is not reasonably available and corresponding reductions in criteria air pollutant emissions are achieved from other construction equipment.[1]	Significant and unavoidable/ adverse

[1] For example, if a Tier 4 Interim piece of equipment is not reasonably available at the time of construction and a lower tier equipment is used instead (e.g., Tier 3), another piece of equipment could be upgraded from a Tier 4 Interim to a higher tier (i.e., Tier 4 Final) or replaced with an alternative-fueled (not diesel-fueled) equipment to offset the emissions associated with using a piece of equipment that does not meet Tier 4 Interim standards.

Table ES-3
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		Before an exemption may be considered by the City, the applicant shall be required to demonstrate that two construction fleet owners/operators in the Los Angeles Region were contacted and that those owners/operators confirmed Tier 4 Interim or better equipment could not be located within the Los Angeles region. To ensure that Tier 4 construction equipment or better would be used during the Proposed Project's construction, the City shall include this requirement in applicable bid documents, purchase orders, and contracts. Successful contractor(s) must demonstrate the ability to supply the compliant construction equipment for use prior to any ground disturbing and construction activities. b) Minimize simultaneous operation of multiple construction equipment units. During construction, vehicles in loading and unloading queues shall not idle for more than 5 minutes, and shall turn their engines off when not in use to reduce vehicle emissions. c) Properly tune and maintain all construction equipment in accordance with manufacturer's specifications; d) Where feasible, employ the use of electrical or alternative fueled (non-diesel) powered construction equipment, including forklifts, concrete/industrial saws, pumps, aerial lifts, air compressors, and other comparable equipment types to the extent commercial available. e) To reduce the need for electric generators and other fuel-powered equipment, provide on-site electrical hookups for the use of hand tools such as saws, drills, and compressors used for building construction. f) Develop a Construction Traffic Control Plan to ensure construction traffic and equipment use is minimized to the extent practicable. The Construction Traffic Control Plan shall include measures to reduce the number of large pieces of equipment operating simultaneously during	

Table ES-3
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		peak construction periods, scheduling of vendor and haul truck trips to occur during non-peak hours, establish dedicated construction parking areas to encourage carpooling and efficiently accommodate construction vehicles, identify alternative routes to reduce traffic congestion during peak activities, and increase construction employee carpooling. g) Encourage construction contractors to apply for South Coast Air Quality Management District "SOON" funds. The "SOON" program provides funds to applicable fleets for the purchase of commercially-available low-emission heavy-duty engines to achieve near-term reduction of NOx emissions from in-use off-road diesel vehicles. **MM-AQ-2: Fugitive Dust Control**. The following measures shall be incorporated into the Proposed Project to reduce construction fugitive dust emissions (PM_{10} and $PM_{2.5}$), generated by grading and construction activities of future development projects implemented under the proposed GCSP, consistent with SCAQMD Rule 403, with a goal of retaining dust on the site: a) Water, or utilize another SCAQMD-approved dust control non-toxic agent, on the grading areas at least three times daily to minimize fugitive dust. b) All permanent roadway improvements shall be constructed and paved as early as possible in the construction process to reduce construction vehicle travel on unpaved roads. To reduce fugitive dust from earth-moving operations, building pads shall be finalized as soon as possible following site preparation and grading activities. c) Stabilize grading areas as quickly as possible to minimize fugitive dust. d) Apply chemical stabilizer, install a gravel pad, or pave the last 100 feet of internal travel path within the construction site prior to public road entry, and to on-site stockpiles of excavated material. e) Remove any visible track-out into traveled public streets with the use of sweepers, water trucks, or similar method as soon as possible.	

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		f) Provide sufficient perimeter erosion control to prevent washout of silty material onto public roads. Unpaved construction site egress points shall be graveled to prevent track-out. g) Wet wash the construction access point at the end of the workday if any vehicle travel on unpaved surfaces has occurred. h) Cover haul trucks or maintain at least 2 feet of freeboard to reduce blow-off during hauling. i) Evaluate the need for reduction in dust generating activity, potential to stop work, and/or implementation of additional dust control measures if winds exceed 25 miles per hour. j) Enforce a 15-mile-per-hour speed limit on unpaved surfaces. k) Provide haul truck staging areas for the loading and unloading of soil and materials. Staging areas shall be located away from sensitive receptors, at the furthest feasible distance. l) Construction Traffic Control Plans shall route delivery and haul trucks required during construction away from sensitive receptor locations and congested intersections, to the extent feasible. Construction Traffic Control plans shall be finalized and approved prior to issuance of grading permits. m) Review and comply with any additional requirements of SCAQMD Rule 403. **MM-AQ-3: Architectural Coating VOC Emissions**. To address the impact relative to VOC emissions, Super-Compliant VOC-content architectural coatings (0 grams per liter to less than 10 grams per liter VOC) shall be used during Proposed Project construction/application of paints and other architectural coatings to reduce ozone precursors. If paints and coatings with VOC content of 0 grams/liter to less than 10 grams/liter cannot be utilized, the developer shall avoid application of architectural coatings during the peak smog season: July, August, and September. The developer shall procure architectural coatings from a supplier in compliance with the requirements of SCAQMD's Rule 1113 (Architectural Coatings).	

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		MM-AQ-4: Vehicle Miles Traveled Reduction Strategies. The Proposed Project shall implement a Transportation Demand Management (TDM) Program to facilitate increased opportunities for transit, bicycling, and pedestrian travel, as well as provide the resources, means, and incentives for ride-sharing and carpooling to reduce vehicle miles traveled and associated criteria air pollutant emissions. The following components are to be included in the TDM Program: *Bicycle and Pedestrian Travel* a) Develop a comprehensive pedestrian network designed to provide safe bicycle and pedestrian access between the various internal Proposed Project land uses, which will include design elements to enhance walkability and connectivity and shall minimize barriers to pedestrian access and interconnectivity. Physical barriers, such as walls or landscaping, that impede pedestrian circulation shall be eliminated. b) The Proposed Project design shall include a network that connects the Proposed Project uses to the existing off-site facilities (e.g., existing off-site bike paths). c) Proposed Project design shall include pedestrian/bicycle safety and traffic calming measures in excess of jurisdiction requirements. Roadways shall be designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips with traffic calming features. Traffic calming features may include: marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers, and others. d) Provide bicycle parking facilities along main travel corridors: one bike rack space per 20 vehicle/employee parking spaces	

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		or to meet demand, whichever results in the greater number of bicycle racks. e) Provide shower and locker facilities to encourage employees to bike and/or walk to work: one shower and three lockers per every 25 employees. *Ride-Sharing and Commute Reduction* f) Promote ridesharing programs through a multi-faceted approach, such as designating a certain percentage of parking spaces for ridesharing vehicles; designating adequate passenger loading and unloading and waiting areas for ridesharing vehicles; or providing a website or message board for coordinating rides. g) Implement marketing strategies to reduce commute trips. Information sharing and marketing are important components to successful commute trip-reduction strategies. Implementing commute trip-reduction strategies without a complementary marketing strategy would result in lower VMT reductions. Marketing strategies may include: new employee orientation of trip reduction and alternative mode options; event promotions; or publications. h) One percent (1%) of vehicle/employee parking spaces shall be reserved for preferential spaces for car pools and van pools. i) Coordinate with the Southern California Association of Governments (SCAG) for carpool, vanpool, and rideshare programs that are specific to the Proposed Project. j) Implement a demand-responsive shuttle service that provides access throughout the Plan Area, to the park-and-ride lots, and to the nearby transit centers. *Transit* k) Bus pull-ins shall be constructed where appropriate within the Plan Area.	

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Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		l) Coordinate with SCAG on the future siting of transit stops/stations within or near the GCSP. **MM-AQ-5: Encourage Electric Vehicles**. Subsequent future projects under the Proposed Project shall incorporate the following into final plans: a) Designate 10% of parking spaces to be for electric and alternative fuel vehicles. b) Install Level 2 EV charging stations in 6% of all parking spaces. **MM-AQ-6: Idling Restriction.** For Proposed Project land uses that include truck idling, the Proposed Project shall minimize idling time of all vehicles and equipment to the extent feasible; idling for periods of greater than five (5) minutes shall be prohibited. Signage shall be posted at truck parking spots, entrances, and truck bays advising that idling time shall not exceed five (5) minutes per idling location. To the extent feasible, the tenant shall restrict idling emission from trucks by using auxiliary power units and electrification. **MM-AQ-7: Energy Conservation.** The following energy conservation measures into Proposed Project building plans: c) Install a solar photovoltaic rooftop system to reduce the electric demand from the local grid. d) Install Energy Star rated heating, cooling, lighting, and appliances. e) Outdoor lighting shall be light emitting diodes (LED) or other high-efficiency lightbulbs. f) Provide information on energy efficiency, energy efficient lighting and lighting control systems, energy management, and existing energy incentive programs to future tenants of the Proposed Project. g) Non-residential structures shall meet the U.S. Green Building Council standards for cool roofs. This is defined as achieving a 3-year solar reflective index (SRI) of 64 for a low-sloped roof and 32 for a high-sloped roof.	

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		h) Outdoor pavement, such as walkways and patios, shall include paving materials with 3-year SRI of 0.28 or initial SRI of 0.33. i) Construction of modest cool roof, defined as Cool Roof Rating Council (CRRC) Rated 0.15 aged solar reflectance and 0.75 thermal emittance. j) Use of Heating, Ventilation and Air Conditioning (HVAC) equipment with a Seasonal Energy Efficiency Ratio (SEER) of 12 or higher. k) Installation of water heaters with an energy factor of 0.92 or higher. l) Maximize the use of natural lighting and include daylighting (e.g., skylights, windows) in rooms with exterior walls that would normally be occupied. m) Include high-efficacy artificial lighting in at least 50% of unit fixtures. n) Install low-NOx water heaters and space heaters, solar water heaters, or tank-less water heaters. o) Use passive solar cooling/heating. p) Strategically plant trees to provide shade. q) Structures shall be equipped with outdoor electric outlets in the front and rear of the structure to facilitate use of electrical lawn and garden equipment. **MM-AQ-8: Low-VOC/Green Cleaning Product Educational Program.** Proposed Project tenants shall develop and implement a Low-VOC/Green Cleaning Product and Paint education program. **MM-AQ-9 Electric Forklifts.** Proposed Project warehouse and manufacturing tenants shall require that all forklifts are electric-powered; if electric is not available or feasible, propane is acceptable.	

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		MM-AQ-10 Transport Refrigeration Unit Plug-Ins. Electric plug-ins shall be installed at the loading docks at cold storage facilities to allow for transport refrigeration unit standby electric plug-in.	
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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	Potentially significant	**MM-AQ-1** **MM-AQ-2** **MM-AQ-3** **MM-AQ-4** **MM-AQ-5** **MM-AQ-6** **MM-AQ-7** **MM-AQ-8** **MM-AQ-9** **MM-AQ-10**	Significant and unavoidable/ adverse
c. Would the project expose sensitive receptors to substantial pollutant concentrations?	Potentially significant	**MM-AQ-1** **MM-AQ-2** **MM-AQ-3** **MM-AQ-4** **MM-AQ-5** **MM-AQ-6** **MM-AQ-7** **MM-AQ-8** **MM-AQ-9** **MM-AQ-10** **MM-AQ-11: Health Risk Siting**. The City shall minimize exposure of sensitive receptors to toxic air contaminants (TACs), to the extent possible, by considering distance, orientation, and wind direction to minimize exposure and associated health risk when siting TAC-emitting sources near sensitive land uses. **MM-AQ-12: Toxic Air Contaminant Reduction.** At the time of discretionary approval of new sources of TAC emissions in close proximity to existing sensitive land uses, the City	Significant and unavoidable/ adverse

Table ES-3
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		shall require development projects to implement applicable best management practices, as necessary and feasible, that will reduce exposure to TACs. Specific reduction measures will be evaluated and determined depending on proposed land use TAC sources and feasibility. **MM-AQ-13**: **Health Risk Assessment Requirements.** Consistent with the California Air Resources Board's recommendations on siting new sensitive land uses, a formal health risk assessment shall be performed under the following conditions: a) *Distribution Centers.* For any distribution center that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week located within 1,000 feet of a sensitive receptor. In addition, configuration of entry and exit points of the distribution center shall be considered to minimize exposure to sensitive receptors. b) *Gasoline Dispensing Facilities*. For any large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater) within 300 feet of a sensitive receptor. For any typical gas dispensing facility (with a throughput of less than 3.6 million gallons per year) within 50 feet of a sensitive receptor. c) *Dry Cleaners Using Perchloroethylene.* For any dry cleaning operation within 300 feet of a sensitive receptor. For operations with three of more machines, consult with the South Coast Air Quality Management District for when a health risk assessment shall be prepared as the distance to the closest sensitive receptor may be less than 300 feet. d) *Other Sources of Toxic Air Contaminants*. For other sources of TACs, the City shall evaluate the need to prepare a health risk assessment based on the types of TACs and the distance to sensitive receptors.	
d. Would the project create objectionable odors affecting a substantial number of people?	Potentially significant	**MM-AQ-14: Odor Siting**. Land uses that have the potential to generate objectionable odors shall be located as far away as possible and/or downwind from sensitive receptors. **MM AQ-15: Odor Abatement Plan.** To address odors from the Proposed Project, any odor-generating land use shall implement an Odor Abatement Plan (OAP). The OAP shall include the following:	Less than significant/ No adverse effects

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		a. Name and telephone number of contact person(s) at the facility responsible for logging in and responding to odor complaints b. Policy and procedure describing the actions to be taken when an odor complaint is received, including the training provided to the staff on how to respond c. Description of potential odor sources at the facility d. Description of potential methods for reducing odors, including minimizing idling of delivery and service trucks and buses, process changes, facility modifications, and/or feasible add-on air pollution control equipment e. Contingency measures to curtail emissions in the event of a public nuisance complaint.	
Would the project have a cumulative air quality impact?	Potentially significant	**MM-AQ-1** through **MM-AQ-15**	Significant and unavoidable/ adverse
Cultural Resources			
a. Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines?	Potentially significant	**MM-CUL-1: Project Level Analysis of Historic Era Built Environment Resources.** Implementation of the Proposed Project (re-zoning and design plans within the Globemaster Corridor Specific Plan area) will likely result in the development of plans for future project-level activities that involve construction and ground disturbing activities within the Globemaster Corridor Specific Plan area. As such, future projects involving these types of activities could constitute a substantial adverse change in the significance of a historical resource by means of physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings, such that the significance of a historical resource would be materially impaired (State CEQA Guidelines Section 15064.5). To mitigate the potential impacts of future projects developed under the Globemaster Corridor Specific Plan, prospective project developers and/or stakeholders shall be required to ensure that potential impacts to historical resources be assessed as part of planning and environmental clearance for their individual project(s). Prior to the initiation of any construction and/or ground disturbing activities, the Proposed Project will require review by a qualified architectural historian to assess	Significant and unavoidable/ adverse

Table ES-3
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		the potential impacts to known and potential CEQA historical resources. If project implementation could result in impacts, than a Historic Resource Evaluation Report will need to be prepared by a qualified architectural historian for the specific project to verify if any CEQA historical resources could be impacted by the Proposed Project. This subsequent identification and impact analysis, including consideration of previously identified historical resources and evaluation of buildings and structures over 45 years old for historical significance in accordance with the guidance of the State of California Office of Historic Preservation (OHP), shall be conducted. In addition, a historical evaluation of the project level impacts (direct or indirect) at the following sites shall be analyzed in accordance with OHP guidance prior to the approval of future project entitlements: 1. Fire Station No. 14, 1838 E. Wardlow Road (APN: 7148-020-024), constructed in 1941 2. 3341 Cherry Avenue (APN: 7148-020-021), constructed in 1933 3. 3275 Cherry Avenue (APN: 7148-020-009), constructed in 1929 4. 3249 Cherry Avenue (APN: 7148-020-010), constructed in 1929 5. 3170 Cherry Avenue (APN: 7149-006-047), constructed in 1940 6. 3204 Cherry Avenue (APN: 7149-006-045), constructed in 1933 7. 3252 Cherry Avenue (APN: 7149-006-042), constructed in 1937 8. 3254 Cherry Avenue (APN: 7149-006-062), constructed in 1937 9. 3366 Cherry Avenue (APN: 7149-006-035), constructed in 1937 10. 3431 Cherry Avenue (APN: 7147-026-017), constructed in 1947 11. Inglesia Católica Santisimo Sacramento, 1900 E. Carson Street (APN: 7137-013-001), constructed in 1942 12. California Heights Baptist Church, 4110 Gardenia Avenue (APN: 7137-012-009), constructed in 1947 A qualified architectural historian, meeting the Secretary of the Interior's Professional Qualification Standards, shall conduct all work related to the	

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		preparation of historic resource evaluation reports, impact analyses, mitigation recommendations (if deemed necessary), and/or subsequent technical reports, should the proposed construction and implementation of future individual projects under the Globemaster Corridor Specific Plan result in potential impacts to CEQA historical resources. If HRE report results indicate that the project will not result in impacts to CEQA historical resources than no further documentation will be required and the impact for the Proposed Project will likely be no impact or less than significant. If the HRE identifies the presence of CEQA historical resources and impacts cannot be avoided through project redesign or relocation than implementation of mitigation measure **MM-CUL-2** will need to be implemented. It is important to note that demolition of a CEQA historical resource cannot be mitigated to less-than-significant. Still, mitigation measure **MM-CUL-2** would apply. **MM-CUL-2 Project Level Mitigation Alternatives.** In consultation with the Planning Bureau of the Long Beach Development Services Department, prior to the approval of a project level that will result in a significant and unavoidable impact to a historic resource under CEQA, mitigation will be required. Mitigation should be developed by an historic qualified historic preservation specialist or architectural historian based on individual resource historic significance to help ensure that the mitigation addresses what is significant about the resource. A range of mitigation options are available including but not limited to development of interpretive materials, salvage of historic materials, or documentation of the buildings and structures proposed for demolition that follows the general guidelines of Historic American Building Survey (HABS)-level III documentation. All mitigation needs to be initiated prior to project construction and completed prior to project completion, HABS documentation, which is a common form of mitigation for CEQA historical resources, shall include high resolution digital photographic recordation, a historic narrative report, and compilation of historic research. The documentation shall be completed by a qualified professional who meets the standards for history, architectural history, or architecture as set forth by the Secretary of the Interior's Professional Qualification Standards (36 CFR, Part 61). The original archival-quality documentation shall be offered as donated material to the to South Central Coastal Information Center	

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Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		(SCCIC), Billie Jean King Main Library, and Historical Society of Long Beach to make it available for current and future generations. Archival copies of the documentation also would be submitted to the City of Long Beach Department of Development Services, where it would be available to local researchers. The documentation reports shall be completed and approved by the City of Long Beach prior to the issuance of demolition permits.	
b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines?	Potentially significant	**MM-CUL-3: Inadvertent Discovery of Archaeological Resources.** In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the Proposed Project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, and tribal monitor/consultant approved by the Gabrieleño Band of Mission Indians-Kizh Nation, can evaluate the significance of the find and determine whether or not additional study is warranted. Depending upon the significance of the find under CEQA (14 CCR 15064.5(f); PRC Section 21082), work may continue on other parts of the project while evaluation and, if necessary, additional protective mitigation takes place. If the discovery proves significant under CEQA, additional work, such as preparation of an archaeological treatment plan, testing, or data recovery may be warranted. **MM-TCR-1** through **MM-TCR-9** (see Tribal Cultural Resources below)	Less than significant/ No adverse effect
c. Would the project disturb any human remains, including those interred outside of formal cemeteries?	Potentially significant	**MM-CUL-4: Inadvertent Discovery of Human Remains.** In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the County Coroner shall be immediately notified of the discovery. No further excavation or disturbance of the Plan Area or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined, within two working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the County Coroner determines that the remains are, or are believed to be, Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission (NAHC) and Public Resources Code 5097.98 shall be followed. In accordance with California Public Resources Code, Section 5097.98, the NAHC must immediately notify those persons it believes to be the most likely descendant from the deceased Native	Less than significant/ No adverse effect

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Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		American. The most likely descendant shall complete their inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.	
Would the project have a cumulative cultural resources impact?	Potentially significant	**MM-CUL-1** through **MM-CUL-4** **MM-TCR-1** through **MM-TCR-9** (see Tribal Cultural Resources below)	Less than significant/ No adverse effects
Greenhouse Gas Emissions			
a. Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Potentially significant	**MM-GHG-1 Water Conservation.** The following water conservation measures into Proposed Project building plans: a) Install low-water use appliances and fixtures b) Restrict the use of water for cleaning outdoor surfaces and prohibit systems that apply water to non-vegetated surfaces c) Implement water-sensitive urban design practices in new construction d) Install rainwater collection systems where feasible. **MM-GHG-2 Solid Waste Reduction.** The following solid waste reduction measures into Proposed Project building plans: a) Provide storage areas for recyclables and green waste in new construction, and food waste storage, if a pick-up service is available. b) Evaluate the potential for on-site composting. **MM-AQ-1** (see Air Quality above) **MM-AQ-4** (see Air Quality above) **MM-AQ-5** (see Air Quality above) **MM-AQ-6** (see Air Quality above) **MM-AQ-7** (see Air Quality above) **MM-AQ-9** (see Air Quality above) **MM-AQ-10** (see Air Quality above)	Significant and unavoidable/ adverse

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
b. Would the project conflict with a plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Potentially significant	**MM-GHG-1** **MM-GHG-2** **MM-AQ-1** (see Air Quality above) **MM-AQ-4** (see Air Quality above) **MM-AQ-5** (see Air Quality above) **MM-AQ-6** (see Air Quality above) **MM-AQ-7** (see Air Quality above) **MM-AQ-9** (see Air Quality above) **MM-AQ-10** (see Air Quality above)	Significant and unavoidable/ adverse
Would the project have a cumulative impact on greenhouse gas emissions?	Potentially significant	**MM-GHG-1** **MM-GHG-2** **MM-AQ-1** (see Air Quality above) **MM-AQ-4** (see Air Quality above) **MM-AQ-5** (see Air Quality above) **MM-AQ-6** (see Air Quality above) **MM-AQ-7** (see Air Quality above)	Significant and unavoidable/ adverse
Hazards and Hazardous Materials			
a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Potentially significant	**MM-HAZ-1:** Prior to the issuance of demolition permits for any buildings or structures that would be demolished in conjunction with individual development projects that would be accommodated by the Globemaster Corridor Specific Plan, the project applicant/developer shall conduct the following inspections and assessments for all buildings and structures on site and shall provide the City of Long Beach Development Services Department with a copy of the report of each investigation or assessment. 1. The project applicant shall retain a California Certified Asbestos Consultant (CAC) to perform abatement project planning, monitoring (including air monitoring), oversight, and reporting of all asbestos-containing materials (ACM) encountered. The abatement, containment, and disposal of all ACM shall be conducted in accordance with the South	Less than significant/ No adverse effects

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Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		Coast Air Quality Management District's Rule 1403 and California Code of Regulation Title 8, Section 1529 (Asbestos). 2. The project applicant shall retain a licensed or certified lead inspector/assessor to conduct the abatement, containment, and disposal of all lead waste encountered. The contracted lead inspector/assessor shall be certified by the California Department of Public Health (CDPH). All lead abatement shall be performed by a CDPH-certified lead supervisor or a CDPH-certified worker under the direct supervision of a lead supervisor certified by CDPH. The abatement, containment, and disposal of all lead waste encountered shall be conducted in accordance with the US Occupational Safety and Health Administration Rule 29, CFR Part 1926, and California Code of Regulation, Title 8, Section 1532.1 (Lead). 3. Evidence of the contracted professionals attained by the project applicant shall be provided to the City of Long Beach Development Services Department. Additionally, contractors performing ACM and lead waste removal shall provide evidence of abatement activities to the City of Long Beach Building and Safety Bureau. **MM-HAZ-2:** Prior to the issuance of project entitlements or grading permits (whichever occurs first) for individual development projects that would be accommodated by the Globemaster Corridor Specific Plan, the project applicant/developer shall submit a Phase I Environmental Site Assessment (ESA) to the City of Long Beach Development Services to identify environmental conditions of the development site and determine whether contamination is present. The Phase I ESA shall be prepared by a Registered Professional Engineer and in accordance with the American Society for Testing and Materials (ASTM) Standard E 1527.13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. If recognized environmental conditions related to soils are identified in the Phase I ESA, the project applicant shall perform soil sampling as a	

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		part of a Phase II ESA. If contamination is found at significant levels, the project applicant shall remediate all contaminated soils in accordance with state and local agency requirements (California Department of Toxic Substances Control, Regional Water Quality Control Board, Long Beach Fire Department, etc.). All contaminated soils and/or material encountered shall be disposed of at a regulated site and in accordance with applicable laws and regulations prior to the completion of grading. Prior to the issuance of building permits, a report documenting the completion, results, and any follow-up remediation on the recommendations, if any, shall be provided to the City of Long Beach Development Services Department evidencing that all site remediation activities have been completed.	
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?	Potentially significant	**MM-HAZ-1** **MM-HAZ-2**	Less than significant/ No adverse effects
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/ No adverse effects	None	Less than significant/ No adverse effects
d. Would the project be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result,	Potentially significant	**MM-HAZ-1** **MM-HAZ-2**	Less than significant/ No adverse effects

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
would it create a significant hazard to the public or the environment?			
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	Less than significant/ No adverse effects	None	Less than significant/ No adverse effects
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	N/A	N/A	N/A
g. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	N/A	N/A	N/A
h. Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where	N/A	N/A	N/A

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
residences are intermixed with wildlands?			
Would the project have a cumulative hazards or hazardous materials impact?	Potentially significant	**MM-HAZ-1** **MM-HAZ-2**	Less than significant/ No adverse effects
Hydrology/Water Quality			
a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	Potentially significant	**MM-HYD-1a**: A Storm Water Pollution Prevention Plan (SWPPP) shall be completed for Proposed Project grading in excess of one acre, in accordance with the Statewide Construction General Permit (State Water Resources Control Board Order 2009-0009-DWQ, as amended). In accordance with the SWPPP, the construction contractor shall implement water quality Best Management Practices (BMPs) to ensure that water quality standards are met, and that stormwater runoff from construction work areas do not cause degradation of water quality in receiving water bodies, including the Cerritos Channel, Los Angeles River, and downstream Los Angeles/Long Beach Harbor. The SWPPP shall include erosion control measures and proper handling of petroleum products, such as proper petroleum product storage and spill response practices, appropriate handling and disposal of small quantities of hazardous materials/wastes, litter control and pick up, and vehicle and equipment repair and maintenance in designated areas. Typical BMPs that shall be incorporated into the SWPPP (as applicable) include the following: 1. Diverting off-site runoff away from the construction site 2. Vegetating landscaped/vegetated swale areas as soon as feasible following grading activities 3. Placing perimeter straw wattles to prevent off-site transport of sediment 4. Construction of sedimentation basins 5. Limitations on work periods during storm events 6. Protection of stockpiled materials	Less than significant/ No adverse effects

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		7. Using drop inlet protection (filters and sand bags or straw wattles), with sandbag check dams within paved areas 8. Regular watering of exposed soils to control dust during demolition and construction 9. Implementing specifications for demolition/construction waste handling and disposal 10. Maintaining erosion and sedimentation control measures throughout the construction period 11. Stabilizing construction entrances to avoid trucks from imprinting soil and debris onto City roadways 12. Training, including for subcontractors, on general site housekeeping 13. Using contained equipment wash-out and vehicle maintenance areas 14. Providing educational materials on oil disposal and recycling programs 15. Implementing spill control at fueling facilities **MM-HYD-1b**: The SWPPP shall be reviewed and approved by the City of Long Beach for compliance with the Los Angeles County Public Works Construction Site Best Management Practices Manual (LACDPW 2010). **MM-HYD-1c**: All Proposed Project construction activities are required to comply with the City of Long Beach, Stormwater Management Plan, which requires controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques, and engineering/system methods for the control of such pollutants. **MM-HYD-2a**: A Standard Urban Stormwater Mitigation Plan (SUSMP) shall be developed during the design of the Proposed Project. The SUSMP shall demonstrate how specific projects would minimize impervious surfaces, retain or treat stormwater runoff from the site, and implement designs consistent with the City of Long Beach Low Impact Development (LID) Best Management Practices (BMP) Design Manual (City of Long Beach 2013). The design shall include Source Control and Treatment BMPs and an Operations & Maintenance Plan for the proposed BMPs. The SUSMP	

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		shall address long-term effects on water quality within the Los Cerritos Channel/Alamitos Bay Watershed and the Los Angeles River Watershed and ensure BMPs and LID designs minimize potential water quality concerns to the maximum extent practicable. **MM-HYD-2b**: The SUSMP shall comply with the City of Long Beach, Stormwater Management Plan, which requires controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques, and engineering/system methods for the control of such pollutants.	
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?	Potentially significant	**MM-HYD-2a** **MM-HYD-2b**	Less than significant/ No adverse effects
c. 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:			
i. Result in substantial erosion or siltation on- or off-site;	Potentially significant	**MM-HYD-1a** **MM-HYD-1b** **MM-HYD-1c** **MM-HYD-3a** A Hydrology/Drainage Report shall be developed during the design of individual projects proposed as part of the Globemaster Corridor Specific Plan. The Hydrology/Drainage Report shall demonstrate that stormwater runoff flow volume and flow rate, associated with specific projects, would be less than or equal to existing conditions to prevent on- and off-site flooding. Project design features that would contribute in reducing stormwater runoff could include: 1. On-site biofiltration (unlined bioswales and biodetention basins) 2. Lined (i.e., impervious) bioswales and detention basins	Less than significant/ No adverse effect

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		3. Vegetation-based stormwater quality control measures, including self-treating landscape areas and lined planters 4. Proprietary stormwater quality control measures, which are also known as manufactured treatment devices **MM-HYD-3b**: The Hydrology/Drainage Report shall comply with the Los Angeles County Department of Public Works Hydrology and Hydraulic Design Manual (LACDPW 2006) for storm drain planning and design calculations.	
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	Potentially significant	**MM-HYD-1a** **MM-HYD-1b** **MM-HYD-1c** **MM-HYD-2a** **MM-HYD-2b** **MM-HYD-3a** **MM-HYD-3b**	Less than significant/ No adverse effect
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	Potentially significant	**MM-HYD-1a** **MM-HYD-1b** **MM-HYD-1c** **MM-HYD-2a** **MM-HYD-2b** **MM-HYD-3a** **MM-HYD-3b**	Less than significant/ No adverse effects
iv. Impede or redirect flood flow.	N/A	N/A	N/A
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	N/A	N/A	N/A

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	Less than significant/ No adverse effects	None	Less than significant/ No adverse effects
Would the project have a cumulative hydrology or water quality impact?	Potentially significant	**MM-HYD-1a** **MM-HYD-1b** **MM-HYD-1c** **MM-HYD-2a** **MM-HYD-2b** **MM-HYD-3a** **MM-HYD-3b**	Less than significant/ No adverse effects
Land Use and Planning			
a. Would the project physically divide an established community?	N/A	N/A	N/A
b. Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	Less than significant/ No adverse effects	None	Less than significant/ No adverse effects
Would the project have a cumulative land use and/or planning impact?	Less than significant/ No adverse effects	None	Less than significant/ No adverse effects

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
Noise			
a. Would the project generate 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??	Potentially significant	**MM-NOI-1:** Construction activities associated with the Proposed Project shall take place only during the permitted times and days per the City of Long Beach, City of Lakewood, and City of Signal Hill noise ordinances, respectively, for the NSLU under consideration **MM-NOI-2**: The City of Long Beach shall enforce adherence to the following measures for all future construction projects implemented under the Proposed Project, as a pre-requisite to approving necessary permits to proceed: a. The project contractor shall, to the extent feasible, submit a construction noise management plan (CNMP) prepared or reviewed by a qualified acoustician (retained at the expense of the project applicant or construction contractor) that features the following: i. A detailed construction schedule, at daily (or weekly, if activities during each day of the week are typical) resolution and correlating to areas or zones of on-site project construction activity(ies) and the anticipated equipment types and quantities involved. Information will include expected hours of actual operation per day for each type of equipment per phase; and, indication of anticipated concurrent construction activities onsite. ii. Suggested locations of a set of noise level monitors, attended by a qualified acoustician or another party under its supervision or direction, at which sample outdoor ambient noise levels will be measured and collected over a sufficient sample period and subsequently analyzed (i.e., compared with applicable time-dependent dBA thresholds) to ascertain compliance with the hourly FTA guidance-based limit of 90 dBA Leq. Sampling shall be performed, at a minimum, on the first (or otherwise considered typical construction operations) day of each distinct construction phase. iii. If sample collected noise level data indicates that the hourly noise threshold has or will be exceeded, construction work shall	Less than significant/ No adverse effects

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		be suspended (for the activity or phase of concern) and the project applicant/owner or construction contractor shall implement one or more of the following measures as detailed or specified in the CNMP: 1) Administrative controls (e.g., reduce operating time of equipment and/or prohibit usage of equipment type[s] within certain distances). 2) Engineering controls (upgrade noise controls, such as install better engine exhaust mufflers). 3) Install noise abatement on the site boundary fencing (or within, as practical and appropriate) in the form of sound blankets or comparable temporary barriers to occlude construction noise emission between the site (or specific equipment operation as the situation may define) and the noise-sensitive receptor(s) of concern. The implemented measure(s) will be reviewed or otherwise inspected and approved by the qualified acoustician (or another party under its supervision or direction) prior to resumption of the construction activity or process that caused the measured noise concern or need for noise mitigation. Noise levels shall be re-measured, after installation of said measures, to ascertain post-mitigation compliance with the noise threshold. As needed, this process shall be repeated and refined until noise level compliance is demonstrated and documented. A report of this implemented mitigation and its documented success will be provided to the City Planner (or other authorized party, as directed by the City of Long Beach). b. All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers. Enforcement shall be accomplished by random field inspections by applicant personnel during construction activities, to the satisfaction of the respective municipality building official or noise control officer.	

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		c. Construction noise reduction methods such as shutting off idling equipment, construction of a temporary noise barrier, maximizing the distance between construction equipment staging areas and adjacent NSLU, and use of electric air compressors and similar power tools, in lieu of fossil-fueled equipment, shall be used where feasible. d. During construction, stationary construction equipment shall be placed such that emitted noise is directed away from or shielded (i.e., introduce light-of-sight occluding barriers, such as storage trailers) from NSLU. e. If equipment is being used that can cause hearing damage at adjacent noise receptor locations (distance attenuation shall be taken into account), portable noise barriers shall be installed that are demonstrated to be adequate to reduce noise levels at receptor locations below hearing damage thresholds (i.e., generally over 90 dBA, assuming this exposure for an 8-hour construction day). This may include erection of temporary berms or plywood barriers to create a break in the line-of-sight, or erection of a heavy fabric tent around the noise source. f. Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow surrounding property owners to contact the job superintendent if necessary. In the event the municipality having jurisdiction receives a complaint, appropriate corrective actions shall be implemented and a report of the action provided to the reporting party. Appropriate corrective actions could include stricter enforcement of construction schedule, re-location of stationary equipment further from adjacent noise-sensitive receptors, reduction in the number of equipment working simultaneously in proximity to the sensitive receptor, erection of temporary noise barriers, or a combination of the above. **MM-NOI-3:** Because heating, ventilation, and air conditioning (HVAC) equipment and other mechanical equipment can generate noise that could affect surrounding NSLU and because the details, specifications, and locations of this equipment is not yet known, the City of Long Beach shall require that future applicants for commercial and industrial developments within the Plan Area retain an acoustical specialist to	

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		review development project construction-level plans. The acoustical specialist shall have the responsibility to ensure that the equipment specifications and plans for HVAC and other outdoor mechanical equipment incorporate measures, such as the specification of quieter equipment or provision of acoustical enclosures, that will avoid exceeding relevant noise standards at nearby noise-sensitive land uses (e.g., residential). Prior to the commencement of construction for future commercial and industrial developments, the acoustical specialist shall certify in writing to the City of Long Beach that the equipment specifications and plans incorporate measures that will achieve the relevant noise limits.	
b. Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	Potentially significant	**MM-NOI-2**	Less than significant/ No adverse effects
c. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	Potentially significant	**MM-NOI-4:** Because the details, specifications, and locations of commercial development potentially involving outdoor use areas within the Proposed Project Community Commercial (CC) district is not yet known, the City of Long Beach shall require that future applicants for commercial and industrial developments within these areas of the Proposed Project to retain an acoustical specialist to review development project construction-level plans. The acoustical specialist shall have the responsibility to ensure that the design, location, and orientation (e.g., facing with respect to Long Beach Airport operations) of outdoor use areas will not expose facility occupant and visitors to Long Beach Airport operations noise levels greater than 65 dBA CNEL. Prior to the approval of discretionary entitlements for future commercial and industrial developments, the acoustical specialist shall certify in writing to the City of Long Beach that the specifications and plans incorporate measures that will achieve this exterior noise limit for these outdoor use areas.. **MM-NOI-5** Because the details, specifications, and locations of commercial development potentially involving nonresidential indoor occupied spaces within the Proposed Project Community Commercial (CC) district is not yet known, the City of Long Beach shall	Less than significant/ No adverse effects

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		require that future applicants for commercial and industrial developments within these areas of the Proposed Project retain an acoustical specialist to review development project construction-level plans. The acoustical specialist shall have the responsibility to ensure that the design and materials of sound insulating assemblies (i.e., the composite of walls, doors, fenestration, etc.) will be sufficient to yield interior background sound levels attributed to exterior-to-interior noise intrusion to no more than 50 dBA hourly Leq. Prior to the approval of discretionary entitlements for future commercial and industrial developments, the acoustical specialist shall certify in writing to the City of Long Beach that the specifications and plans incorporate measures that will achieve this interior background noise limit for these occupied indoor use areas.	
Would the project have a cumulative noise impact?	Potentially significant	**MM-NOI-1** **MM-NOI-2** **MM-NOI-3** **MM-NOI-4** **MM-NOI-5**	Less than significant/ No adverse effects
Population and Housing			
a. Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads of other infrastructure)?	Less than significant/ No adverse effects	None	Less than significant/ No adverse effects
b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	N/A	N/A	N/A

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
Would the project have a cumulative impact on population and housing?	Less than significant/ No adverse effects	None	Less than significant/ No adverse effects
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:			
Fire protection?	Less than significant/ No adverse effects	None	Less than significant/ No adverse effects
Police protection?	Less than significant/ No adverse effects	None	Less than significant/ No adverse effects
Schools?	N/A	N/A	N/A
Parks?	N/A	N/A	N/A

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Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
Other public facilities?	Less than significant/ No adverse effects	None	Less than significant/ No adverse effects
Would the project have cumulative public services impacts?	Less than significant/ No adverse effects	None	Less than significant/ No adverse effects
Transportation and Traffic			
a. Would the project conflict with an applicable plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	Potentially significant	**MM-TRAF-1** Prior to receiving a Certificate of Occupancy, the Project Applicant shall be responsible for the construction of the following improvements at Cherry Avenue/Carson Street: Widen and/or restripe the existing exclusive northbound right-turn lane to a shared through-right turn lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach. **MM-TRAF-2** Prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at Cherry Avenue/Cover Street**:** Widen or restripe the existing exclusive northbound right-turn lane to a shared through-right turn lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach. **MM-TRAF-3** Prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at Cherry Avenue/36th Street: Restripe the westbound approach to provide a third left-turn lane. Construct an exclusive northbound right-turn lane. These improvements are subject to the approval of the City of Long Beach and would require additional right-of-way acquisition. **MM-TRAF-4** Prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at Cherry Avenue/ Wardlow Road: Construct two additional northbound through lanes and an exclusive northbound right-turn lane. Construct two additional southbound through lanes. Restripe the existing eastbound shared through-left turn lane to an exclusive left-turn lane and construct an additional eastbound through lane. Restripe the existing westbound	Significant and unavoidable/ adverse

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Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		shared through-left turn lane to an exclusive left-turn lane. Construct an additional westbound left-turn lane and two westbound through lanes. Restripe the westbound shared through-right turn lane to an exclusive westbound right-turn lane. These improvements are subject to the approval of the City of Long Beach. **MM-TRAF-5** Prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at Orange Avenue/ 32nd Street: Restripe the northbound approach to provide an exclusive right-turn lane. These improvements are subject to the approval of the City of Signal Hill. **MM-TRAF-6** In addition to mitigation measure **MM-TRAF-1**, prior to receiving a Certificate of Occupancy, the Project Applicant shall be responsible for the construction of the following improvements at Cherry Avenue/Carson Street: Widen the eastbound approach to construct a 4th through lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach. **MM-TRAF-7** In addition to mitigation measure **MM-TRAF-2**, prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at Cherry Avenue/Cover Street**:** Widen the northbound approach to provide an exclusive right-turn lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach. **MM-TRAF-8** In addition to mitigation measure **MM-TRAF-3**, prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at Cherry Avenue/36th Street**:** Modify the traffic signal to provide for an 8-phase traffic signal. These improvements are subject to the approval of the City of Long Beach. **MM-TRAF-9** Prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at Atlantic Avenue/ Spring Street: Construct an additional eastbound through lane and an additional westbound through lane. Restripe the existing exclusive eastbound right-turn lane to a shared through-right turn lane. Restripe the existing exclusive westbound right-turn lane to	

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		a shared through-right turn lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach. **MM-TRAF-10** Prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at Orange Avenue/ Spring Street: Widen and/or restripe the intersection to include dual northbound left-turn lanes. Remove the exclusive northbound right-turn lane. Convert the southbound right-turn lane into a shared through/right-turn lane. Widen along the Proposed Project frontage to accommodate two south bound through lanes. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach. **MM-TRAF-11** Prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at Temple Avenue/ Spring Street: Widen the eastbound approach to provide an exclusive right-turn lane. Widen the westbound approach to provide an additional left-turn lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach. **MM-TRAF-12** Prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at Redondo Avenue/ Spring Street: Widen the eastbound approach to provide an additional through lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach. **MM-TRAF-13** Prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at Cherry Avenue at Willow Street**:** Construct an additional northbound through lane. Construct an additional southbound through lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Signal Hill. **MM-TRAF-14** Prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at I-405 Southbound Off-Ramp/Spring Street**:** Restripe the westbound approach to provide an additional through lane. These improvements are subject to the approval of the City of Long Beach and/or Caltrans.	

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Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	Less than significant/ No adverse effects	None	Less than significant/ No adverse effects
c. Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	N/A	N/A	N/A
d. Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	N/A	N/A	N/A
e. Would the project result in inadequate emergency access?	N/A	N/A	N/A
f. Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	N/A	N/A	N/A
Would the project have cumulative impacts on transportation and traffic?	Potentially significant	**MM-TRAF-1** **MM-TRAF-2** **MM-TRAF-3** **MM-TRAF-4**	Significant and unavoidable/ adverse

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Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		MM-TRAF-5 **MM-TRAF-6** **MM-TRAF-7** **MM-TRAF-8** **MM-TRAF-9** **MM-TRAF-10** **MM-TRAF-11** **MM-TRAF-12** **MM-TRAF-13** **MM-TRAF-14**	
Tribal Cultural Resources			
a. Would the project create a substantial adverse change in the significance of a tribal cultural resources, 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	Less than significant/ No adverse effects	None	Less than significant/ No adverse effects

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Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
Public Resources Code section 5020.1(k)?			
b. 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.)	Potentially significant	**MM-TRC-1**: Prior to the issuance of any Grading Permit a project, the City of Long Beach Development Services Department shall ensure that the construction contractor provide access for Native American monitoring during ground-disturbing activities. This provision shall be included on project plans and specifications. The site shall be made accessible to any Native American tribe requesting to be present, provided adequate notice is given to the construction contractor and that a construction safety hazard does not occur. **MM-TRC-2**: Should a potential TCR be encountered and no monitors are present, construction activities near the encounter shall be temporarily halted within 50 feet of the discovery and the City notified. The City will notify Native American tribes that have been identified by the Native American Heritage Commission to be traditionally and culturally affiliated with the geographic area of the Proposed Project. If the potential resource is archaeological in nature, appropriate management requirements shall be implemented as outlined in mitigation measure **MM-CUL-1** (see Section 3.3.6, Cultural Resources Mitigation Measures). If the City determines that the potential resource is a TCR (as defined by PRC, Section 21074), tribes consulting under AB 52 and SB 18 would be provided a reasonable period of time, typically 5 days from the date a new discovery is made, to conduct a site visit and make recommendations regarding future ground disturbance activities, as well as the treatment and disposition of any discovered TCRs. A qualified archaeologist shall implement a plan for the treatment and disposition of any discovered TCRs based on the nature of the resource and shall consider the recommendations of the tribe(s). Implementation of proposed recommendations will be made based on the determination of the City that the approach is reasonable and feasible. All activities shall be conducted in accordance with applicable regulatory requirements. **MM-TCR-3 Native American Monitor/Consultant.** The Project Applicant shall be required to retain and compensate for the services of a Tribal monitor/consultant who is both approved by the Gabrieleño Band of Mission Indians-Kizh Nation Tribal	Less than significant/ No adverse effects

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		Government and is listed under the NAHC's Tribal Contact list for the area of the project location. This list is provided by the NAHC. The monitor/consultant will only be present on-site during the construction phases that involve ground disturbing activities. Ground disturbing activities are defined by the Gabrieleño Band of Mission Indians-Kizh Nation as activities that may include, but are not limited to, pavement removal, pot-holing or auguring, grubbing, tree removals, boring, grading, excavation, drilling, and trenching, within the Plan Area. The Tribal Monitor/consultant will complete daily monitoring logs that will provide descriptions of the day's activities, including construction activities, locations, soil, and any cultural materials identified. The on-site monitoring shall end when the Plan Area grading and excavation activities are completed, or when the Tribal Representatives and monitor/consultant have indicated that the site has a low potential for impacting Tribal Cultural Resources. **MM-TCR-4 Unanticipated Discovery of Tribal Cultural and Archaeological Resources.** Upon discovery of any archaeological resources, cease construction activities in the immediate vicinity of the find until the find can be assessed. All archaeological resources unearthed by project construction activities shall be evaluated by the qualified archaeologist and tribal monitor/consultant approved by the Gabrieleño Band of Mission Indians-Kizh Nation. If the resources are Native American in origin, the Gabrieleño Band of Mission Indians-Kizh Nation shall coordinate with the landowner regarding treatment and curation of these resources. Typically, the Tribe will request reburial or preservation for educational purposes. Work may continue on other parts of the project while evaluation and, if necessary, mitigation takes place (CEQA Guidelines Section15064.5 [f]). If a resource is determined by the qualified archaeologist to constitute a "historical resource" or "unique archaeological resource", time allotment and funding sufficient to allow for implementation of avoidance measures, or appropriate mitigation, must be available. The treatment plan established for the resources shall be in accordance with CEQA Guidelines Section 15064.5(f) for historical resources and Public Resources Code Sections 21083.2(b) for unique archaeological resources. Preservation in place (i.e., avoidance) is the preferred manner of treatment. If	

Table ES-3
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. Any historic archaeological material that is not Native American in origin shall be curated at a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County or the Fowler Museum, if such an institution agrees to accept the material. If no institution accepts the archaeological material, they shall be offered to a local school or historical society in the area for educational purposes. **MM-TCR-5 Unanticipated Discovery of Human Remains and Associated Funerary Objects.** Native American human remains are defined in PRC 5097.98 (d)(1) as an inhumation or cremation, and in any state of decomposition or skeletal completeness. Funerary objects, called associated grave goods in PRC 5097.98, are also to be treated according to this statute. Health and Safety Code 7050.5 dictates that any discoveries of human skeletal material shall be immediately reported to the County Coroner and excavation halted until the coroner has determined the nature of the remains. If the coroner recognizes the human remains to be those of a Native American or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission (NAHC) and PRC 5097.98 shall be followed. **MM-TCR-6 Resource Assessment & Continuation of Work Protocol**. Upon discovery, the tribal and/or archaeological monitor/consultant/consultant will immediately divert work at minimum of 150 feet and place an exclusion zone around the burial. The monitor/consultant(s) will then notify the Tribe, the qualified lead archaeologist, and the construction manager who will call the coroner. Work will continue to be diverted while the coroner determines whether the remains are Native American. The discovery is to be kept confidential and secure to prevent any further disturbance. If the finds are determined to be Native American, the coroner will notify the NAHC as mandated by state law who will then appoint a Most Likely Descendent (MLD). **MM-TCR-7 Kizh-Gabrieleno Procedures for burials and funerary remains**. If the Gabrieleno Band of Mission Indians – Kizh Nation is designated MLD, the following	

Table ES-3
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		treatment measures shall be implemented. To the Tribe, the term "human remains" encompasses more than human bones. In ancient as well as historic times, Tribal Traditions included, but were not limited to, the burial of funerary objects with the deceased, and the ceremonial burning of human remains. These remains are to be treated in the same manner as bone fragments that remain intact. Associated funerary objects are objects that, as part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later; other items made exclusively for burial purposes or to contain human remains can also be considered as associated funerary objects. **MM-TCR-8 Treatment Measures.** Prior to the continuation of ground disturbing activities, the land owner shall arrange a designated site location within the footprint of the project for the respectful reburial of the human remains and/or ceremonial objects. In the case where discovered human remains cannot be fully documented and recovered on the same day, the remains will be covered with muslin cloth and a steel plate that can be moved by heavy equipment placed over the excavation opening to protect the remains. If this type of steel plate is not available, a 24-hour guard should be posted outside of working hours. The Tribe will make every effort to recommend diverting the project and keeping the remains in situ and protected. If the project cannot be diverted, it may be determined that burials will be removed. The Tribe will work closely with the qualified archaeologist to ensure that the excavation is treated carefully, ethically and respectfully. If data recovery is approved by the Tribe, documentation shall be taken which includes at a minimum detailed descriptive notes and sketches. Additional types of documentation shall be approved by the Tribe for data recovery purposes. Cremations will either be removed in bulk or by means as necessary to ensure completely recovery of all material. If the discovery of human remains includes four or more burials, the location is considered a cemetery and a separate treatment plan shall be created. Once complete, a final report of all activities is to be submitted to the Tribe and the NAHC. The Tribe does NOT authorize any scientific study or the utilization of any invasive diagnostics on human remains.	

Table ES-3
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		Each occurrence of human remains and associated funerary objects will be stored using opaque cloth bags. All human remains, funerary objects, sacred objects and objects of cultural patrimony will be removed to a secure container on site if possible. These items should be retained and reburied within six months of recovery. The site of reburial/repatriation shall be on the Plan Area but at a location agreed upon between the Tribe and the landowner at a site to be protected in perpetuity. There shall be no publicity regarding any cultural materials recovered. **MM-TCR-9 Professional Standards.** Archaeological and Native American monitoring and excavation during construction projects will be consistent with current professional standards. All feasible care to avoid any unnecessary disturbance, physical modification, or separation of human remains and associated funerary objects shall be taken. Principal personnel must meet the Secretary of Interior standards for archaeology and have a minimum of 10 years of experience as a principal investigator working with Native American archaeological sites in southern California. The Qualified Archaeologist shall ensure that all other personnel are appropriately trained and qualified.	
Would the project have cumulative impacts on tribal cultural resources?	Potentially significant	**MM-TRC-1** **MM-TRC-2** **MM-TRC-3** **MM-TRC-4** **MM-TRC-5** **MM-TRC-6** **MM-TRC-7** **MM-TRC-8** **MM-TRC-9**	Less than significant/ No adverse effects
Utilities and Service Systems			
a. Would the project result in the relocation or construction of new or expanded water, wastewater treatment, or	Potentially significant	**MM-UTIL-1** Prior to the issuance of project entitlements or grading permits, whichever comes first, for individual development or redevelopment projects under the Globemaster Corridor Specific Plan (GCSP), a utilities report shall be prepared by the Project Applicant that will identify the ability for existing utility infrastructure to	Less than significant/ No adverse effects

Table ES-3
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?		serve the project. As part of this report, the project applicant shall provide evidence to the City of Long Beach Development Services Department that that the development project has been reviewed by the applicable utility provider and that a "Will Serve" letter has been issued. The "Will Serve" letter process is necessary in order to determine whether or not sufficient capacity exists to serve each development project and if the existing utility facilities will be affected by the development project. The report shall include, but not be limited to, the following analyses: Water Infrastructure 1. The report shall analyze the existing water main conditions and estimates the project-specific water demand for future development. Any development or redevelopment project that would impact existing water facilities within the Plan Area, for which improvements and/or relocation are required or have been identified, shall fund the improvements those as prescribed by City of Long Beach Water Department. Stormwater/Storm Drain Infrastructure 2. A Hydrology/Hydraulics report shall be prepared that estimates the site-specific discharge rates for a future development. The hydrology and hydraulic study shall analyze the on-site and immediate off-site storm drain systems to determine capacity and integrity of the existing systems. The Project Applicant shall request the "allowable discharge rate" – which limits peak flow discharges as compared to existing conditions based on regional flood control constraints – from the Los Angeles County Department of Public Works and shall comply with such discharge rate. This report can be completed in conjunction with the Hydrology/Drainage Report required under mitigation measure	

Table ES-3
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		MM-HYD-3a. Any development or redevelopment project that would impact segments of the existing storm drain facilities within the Plan Area, for which improvements are required, shall fund upsizing of those storm drain segments as prescribed by City of Long Beach Public Works Department and Los Angeles County Flood Control District. Wastewater/Sewer Infrastructure 3. The report shall analyze the existing sewer main conditions and estimates the project-specific wastewater generation for future development. Any development or redevelopment project that would impact existing sewer facilities within the Plan Area, for which improvements and/or relocation are required or have been identified, shall fund the improvements those as prescribed by Los Angeles County Sanitation District and Long Beach Water Department. Electrical Infrastructure 4. The report shall analyze the existing electrical capacity and estimate the project-specific electrical demand for future development. Any development or redevelopment project that would impact existing electrical loads or require new electrical substations or facilities within the Plan Area, for which improvements and/or relocation are required or have been identified, shall fund the improvements those as prescribed by Southern California Edison. Natural Gas 5. The report shall analyze the existing gas pipeline capacity and estimate the project-specific natural gas demand for future development. Any development or redevelopment project that would	

Table ES-3
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		impact existing natural gas facilities or require new infrastructure within the Plan Area, for which improvements and/or relocation are required or have been identified, shall fund the improvements those as prescribed Long Beach Energy Resources Department. **MM-HYD-1a** (see Hydrology and Water Quality above) **MM-HYD-3a** (see Hydrology and Water Quality above)	
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/ No adverse effects	None	Less than significant/ No adverse effects
c. Would the project result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	Less than significant/ No adverse effects	None	Less than significant/ No adverse effects
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/ No adverse effects	None	Less than significant/ No adverse effects

Table ES-3
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
e. Would the project comply with federal, state, and local statutes and regulations related to solid waste?	N/A	N/A	N/A
Would the project have cumulative public services and/or utilities impacts?	Potentially significant	**MM-UTIL-1** **MM-HYD-1a**	Less than significant/ No adverse effects
Environmental Justice			
a. Would the project cause a disproportionately high or adverse human health, economic, social, or environmental impact on a minority population or low-income population?	No adverse effects	None	No adverse effects
Would the project have cumulative environmental justice impacts?	No adverse effects	None	No adverse effects
Energy			
a. Would the project result in wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	Less than significant/ No adverse effects	None	Less than significant/ No adverse effects
b. Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	Less than significant/ No adverse effects	None	Less than significant/ No adverse effects

Table ES-3
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
Would the project have a cumulative impact on energy?	Less than significant/ No adverse effects	None	Less than significant/ No adverse effects

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CHAPTER 1.0
INTRODUCTION

1.1 SUMMARY AND SCOPE OF THE PROPOSED PROJECT

This joint Program Environmental Impact Report (PEIR) and Program Environmental Impact Statement (PEIS) has been prepared by the City of Long Beach (City) to evaluate the potential environmental effects that could result from development of the proposed Globemaster Corridor Specific Plan (GCSP; Proposed Project). This PEIR/PEIS has been prepared in conformance with the California Environmental Quality Act of 1970 (CEQA) statutes (Cal. Pub. Res. Code, Section 21000 et. seq., as amended) and implementing guidelines (Cal. Code Regs., Title 14, Section 15000 et. seq.).

In 2015, the City applied for and was awarded a grant from the United States Department of Defense (DoD) Office of Economic Adjustments (OEA) to prepare and implement the Boeing C-17 Transition Program. Federally funded projects must follow the procedural requirements of the National Environmental Policy Act (Title 42 of the United States Code [U.S.C.] § 4321 et seq: "NEPA"). As such, this PEIR/PEIS has been prepared in conformance with the National Environmental Policy Act (NEPA).

The Proposed Project provides a framework for the development and improvement of the GCSP land use districts and overlay zones. The GCSP area (Plan Area) totals 437 acres and is located in the north-central portion of the City of Long Beach (City) on the west and south sides of the Long Beach Airport.

The applicant is the City of Long Beach. The City has developed the GCSP as part of a comprehensive transition program in the wake of the closure of the C-17 Globemaster military aircraft production facility owned by the Boeing Corporation (C-17 Site). The GCSP will build upon the work developed during phase one of the C-17 Transition Master Plan in 2016 and will provide a strategic planning framework for attracting quality industries and improving the character, design, and functionality of the Plan Area. The C-17 Site is located on the east side of Cherry Avenue adjacent to the west side of the Long Beach Airport. The central portion of the Plan Area includes an approximately 93-acre site that consisted of former Boeing aircraft manufacturing facilities, while the remainder of the Plan Area includes industrial and commercial corridors and nodes along Cherry Avenue and Spring Street.

Building on the legacy of the Boeing aircraft manufacturing industry and the high-quality jobs it provided, the GCSP aims to continue to attract and optimize new work opportunities to retain the regional skills base, expertise, and competitive economies of Long Beach Airport, the City of Long Beach, and the Southern California region. The GCSP represents the next step in the overall transition of the former Boeing C-17 Site and surrounding Plan Area. The GCSP assigns

appropriate land use districts for land properties within the Plan Area, including six districts and two overlay zones. The GCSP establishes a land use and mobility plan, development regulations, design guidelines, infrastructure requirements, and implementation strategies necessary to becoming a flexible commercial and industrial district in the City. No residential component is included in the GCSP.

1.2 BACKGROUND

Impacts of the C-17 Site Closure

In September 2013, the Department of Defense notified Boeing, manufacturer of the C-17 Globemaster III military aircraft, that it would no longer place future orders for the C-17. In April 2014, Boeing announced it would close C-17 production plants by mid-2015 due primarily to the termination of Department of Defense contracts, which represented the single largest demand for the aircraft. Boeing closed the C-17 Site in December 2015. At its peak, the C-17 Site employed up to 5,000 people; however, since 2010, Boeing has steadily downsized the C-17 workforce in anticipation of the closure.

In anticipation of the C-17 Site closure and the potential effects the closure would have on the City and its surroundings, the City applied for and was awarded a grant from the Department of Defense Office of Economic Adjustments (OEA) to prepare and implement the Boeing C-17 Transition Program.

The C-17 Transition Master Plan resulted in a detailed analysis of existing economic, land use, and infrastructure conditions in the Plan Area; alternative land use scenarios for the C-17 Site; and a planning and urban design framework for the Plan Area's C-17 Transition Master Plan. Other recently completed or current City plans include the 2019 Land Use Element/Urban Design Element Environmental Impact Report (EIR), the recently completed EIRs for the Midtown Specific Plan and Southeast Area Specific Plan (SEASP), and the Noise Element and Climate Action and Adaptation Plans that are currently underway in the City.

As the results of the C-17 Transition Master Plan revealed the need for comprehensive planning that addressed land use, economic development, and infrastructure improvements in the Plan Area, the City determined that a Specific Plan was the appropriate tool to approach each need holistically. The GCSP provides a combined land use and mobility plan, development regulations, and design guidelines, as well as implementation measures that work together to advance the objectives of the C-17 Transition Master Plan.

The GCSP builds upon the C-17 Transition Master Plan to provide a strategic planning framework for attracting quality industries and improving the character, design, and functionality of the Plan Area.

EIRs are informational documents "which will inform public agency decision-makers and the public generally of the significant environmental effect of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project" (14 CCR 15121). The purpose of this PEIR/PEIS is to present the evaluation of the anticipated environmental effects of the Proposed Project.

1.3 REGULATORY REQUIREMENTS

1.3.1 CEQA Compliance

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

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

In accordance with Section 15121(a) of the State CEQA Guidelines, this PEIR is an informational document that will inform the City of Long Beach and the public of: (1) the significant environmental effects of the proposed project, (2) possible ways to minimize any significant effects, and (3) reasonable alternatives to the project. Thus, the PEIR is an important document that is ultimately used by the City of Long Beach when considering whether to approve, deny, or modify the Proposed Project.

This document is a joint PEIR/PEIS, as per the requirements of both CEQA and NEPA (see Section 1.3.2, below).

1.3.2 NEPA Compliance

NEPA (Title 42 of the United States Code [U.S.C.] § 4321 et seq) is required when a federal action is taken that may have impacts on the human and natural environment. Federal actions include projects that require federal funding. The Boeing C-17 Transition Program and subsequent development of the Plan Area may have a significant effect on the human and natural environment. An EIS is required for major federal actions with the potential to significantly affect the quality of

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

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

the human and natural environment. Since the City was awarded a grant from the DoD OEA to prepare and implement the Boeing C-17 Transition Program, including the Proposed Project, this denotes a federal action. The DoD OEA is the lead agency under NEPA. The City prepared this PEIR/PEIS in accordance with NEPA guidelines.

This document is a joint PEIR/PEIS and is prepared to meet the requirements of both CEQA and NEPA (see Section 1.3.1, above). A federal agency may use a completed CEQA review when it has participated in the preparation of the CEQA review and the CEQA review will meet the requirements of NEPA. As such, cooperation between the OEA and the City has occurred to integrate the environmental impact analysis to the satisfaction of applicable laws and requirements, as practical.

1.4 ENVIRONMENTAL PROCEDURES

The basic purposes of CEQA are to:

1. Inform governmental decision makers and the public about the potential, significant environmental effects of proposed activities;
2. Identify the ways that environmental damage can be avoided or significantly reduced;
3. Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
4. Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved (14 CCR 15002).

The EIR process under CEQA typically consists of three parts: (1) the Notice of Preparation (NOP) and Initial Study (IS), (2) Draft EIR, and (2) Final EIR. The NOP and IS were intended to encourage interagency communication concerning the proposed action and provide sufficient background information about the proposed action so that agencies, organizations, and members of the public could respond with specific comments and questions on the scope and content of the EIR. Based upon the information contained within the NOP and IS, the City concluded that an EIR should be prepared.

The NOP and IS for this PEIR/PEIS was distributed to the State Clearinghouse, interested agencies, and groups on September 12, 2018. Pursuant to Section 15082 of the State CEQA Guidelines, recipients of the NOP and IS were requested to provide responses within 30 days after their receipt of the NOP. The 30-day NOP public review period ended October 11, 2018. The IS and NOP are contained in Appendix A-1, Initial Study; and Appendix A-2, Notice of Preparation, respectively. Comments received during the NOP public review period were considered during the preparation of this PEIR/PEIS. The NOP and IS comments are included in Appendix A-3, Notice

of Preparation Comment Letters, of this PEIR/PEIS. Based on the scope of analysis for this PEIR/PEIS, the following issues were determined to be potentially significant, and are therefore, addressed in Chapter 3.0, Environmental Analysis, of this document:

- Aesthetics
- Air Quality
- Cultural Resources
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Environmental Justice
- Energy

Twelve comment letters/emails were received during the NOP public review period and four written scoping meeting comments were received during the scoping meeting expressing concern about potential historic impacts, noise impacts, and traffic impacts. These comments were considered as part of the analyses prepared and presented in Chapter 3.0, Environmental Analysis, of this Draft PEIR/PEIS. Copies of the comment letters are included in Appendix A-3, Notice of Preparation Comment Letters, and are summarized in Table 1-1, Summary of Comments Received in Response to the NOP.

Table 1-1
Summary of Comments Received in Response to the NOP

Commenting Agency or Property Owner	Date	Summary of Comments	Chapter/Section Where Comment Is Addressed
State Agencies			
State Clearinghouse	09/12/2018	The commenter acknowledges receipt of the NOP.	N/A
Native American Heritage Commission	9/19/2018	The commenter notes that CEQA was amended significantly in 2014 to include a separate category of cultural resources, "tribal cultural resources," and provides that a project that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. Assembly Bill (AB) 52 applies to any project for which a notice of preparation is filed after July 1, 2015. AB 52 has tribal consultation requirements and certain timing requirements for notification that are outlined in the letter.	Section 3.12, Tribal Cultural Resources

Table 1-1
Summary of Comments Received in Response to the NOP

Commenting Agency or Property Owner	Date	Summary of Comments	Chapter/Section Where Comment Is Addressed
		The commenter requested an appropriate records search to determine known traditional cultural resources, and preparation of an archaeological inventory survey if required. The commenter provided a list of appropriate Native American contacts for consultation concerning the Plan Area. According to the commenter, mitigation should be included in the EIR to identify and evaluate accidentally discovered archaeological resources pursuant to California Health and Safety Code Section 7050.5 and CEQA Section 15064.5(f).	
Regional Agencies			
South Coast Air Quality Management District (SCAQMD)	10/10/2018	Recommends that the CEQA Air Quality Handbook (1993) be used for all air quality analysis and California Emissions Estimator Model land use emissions software be used to estimate pollutant emissions from typical land use developments. Air quality impacts from Proposed Project operations and construction should be calculated. The South Coast Air Quality Management District has developed regional and localized significance thresholds for criteria pollutants that should be compared to estimated Proposed Project emissions. A mobile source health risk assessment should be performed in the event that the Proposed Project generates or attracts vehicular trips. The California Air Resources Board's Air Quality and Land Use Handbook: A Community Perspective is recommended as guidance for siting incompatible land uses. Several resources are recommended to assist in the drafting of mitigation measures in the event that the Proposed Project generates significant adverse air quality impacts. CEQA requires that all feasible mitigation measures that go beyond what is required by the law be used during Proposed Project construction and operation to minimize or eliminate these impacts. Any impacts resulting from mitigation measures must be discussed pursuant to CEQA Guidelines Section 15126.4(a)(1)(D).	Section 3.2, Air Quality; Section 3.4, Greenhouse Gas Emissions
Southern California Association of Governments (SCAG)	10/11/2018	According to the commenter, SCAG reviews environmental documents for consistency with regional plans and the adopted Regional Transportation Plan/ Sustainable Communities Strategy (RTP/SCS). The commenter suggests the EIR analyze consistency with the RTP/SCS goals and demographic and growth forecasts. The commenter also recommends reviewing existing	Section 3.7, Land Use and Planning

Table 1-1
Summary of Comments Received in Response to the NOP

Commenting Agency or Property Owner	Date	Summary of Comments	Chapter/Section Where Comment Is Addressed
		mitigation measures included in the Final PEIR for the 2016 RTP/SCS.	
Metropolitan Water District of Southern California (MWDSC)	10/11/2018	The commenter indicates the GCSP covers an area that includes MWDSC's Second Lower Feeder Pipelines and associated easements. The commenter indicates the Proposed Project must not impact MWDSC's ability access, operate, and maintain existing facilities. In addition, any proposed grading within MWDSC's easements will require MWDSC's review and written acceptance.	Section 3.6, Utilities and Service Systems
Los Angeles County Sanitation Districts (LACSD)	10/10/2018	The commenter indicates information regarding sewerage system deficiencies are available by contacting the City Department of Public Works. In addition, LACSD should review individual developments within the Plan Area to determine whether or not sufficient capacity is available. LACSD may charge a fee for connections to the existing sewer system.	Section 3.13, Utilities and Service Systems
California Department of Transportation (Caltrans), District 7	10/08/2018	According to the commenter, Caltrans mandates that CEQA review of transportation impacts use vehicle miles traveled (VMT), and encourages the Lead Agency to evaluate the potential of Transportation Demand Management to reduce VMT and GHGs. An encroachment permit will be required for projects proposed within with Caltrans right-of-way.	Section 3.11, Traffic and Circulation
Local Agencies			
Walk Bike Long Beach	9/17/2018	The commenter suggests including a more detailed cross-section of future walkways and having pedestrian connections within blocks. The commenter also recommends having inviting and safe pedestrian connections between the Plan Area to Cherry Avenue and Spring Street.	Chapter 2.0, Project Description; Section 3.11, Transportation and Circulation
Walk Bike Long Beach	10/11/2018	The commenter suggests correcting the auto-orientation of the existing Plan Area and including bike lanes, sidewalks, and other infrastructure to encourage active transportation. The commenter also indicates the GCSP should acknowledge the proximity to the Metro Blue Line and the larger residential area to the west of the Plan Area. According to the commenter, a TIA should be conducted and the results included in the PEIR/PEIS.	Chapter 2.0, Project Description; Section 3.11, Transportation and Circulation
California Heights Neighborhood Association	10/11/2018	The commenter is generally pleased with the City for improving the Boeing property and the Cherry Avenue corridor, and requests the GCSP consider potential impacts to the California Heights Historic District. The commenter also request the traffic analysis include	3.3, Cultural Resources; Section 3.11, Transportation and Circulation

Table 1-1
Summary of Comments Received in Response to the NOP

Commenting Agency or Property Owner	Date	Summary of Comments	Chapter/Section Where Comment Is Addressed
		appropriate measures to reduce potential traffic impacts.	
Individual Comments			
Julianna Robins	10/01/2018	The commenter requests adding more public open space to the GCSP, improving bicycle safety, and making Cherry Avenue and Wardlow Road more walkable. Because the City of Lakewood has businesses fronting Cherry Avenue, the commenter suggests coordinating with the City of Lakewood for improvements. The commenter also suggests incorporating housing.	Chapter 2.0, Project Description; Section 3.11, Transportation and Circulation
Kristi von der Linden	10/04/2018	The commenter is concerned with noise and traffic associated with the Proposed Project during construction and operations.	Section 3.8, Noise; Section 3.11, Transportation and Circulation
Russell McCurdy	10/09/2018	The commenter is concerned with increased traffic on Cherry Avenue resulting from new businesses and potential safety issues for pedestrians, bicycles, and scooters. The commenter is also concerned with reducing the lane width of Cherry Avenue, and the elimination of curbside parking.	Section 3.11, Transportation and Circulation
Scoping Meeting Comments			
David Herley	10/11/2018	The commenter request to be added to the noticing list.	Not Applicable
Judith Anderson	10/11/2018	The comments is concerned about the amount of open-space for non-humans and requests more habitat open space be provided.	Chapter 2.0, Project Description
Elise Puritz	10/11/2018	The commenter expressed excitement in regards to the Proposed Project and the increase in jobs.	Chapter 2.0, Project Description
Silvia Quinones	10/11/2018	The commenter is concerned about available parking.	Section 3.11, Transportation and Circulation

The PEIR/PEIS will be made available for review to the public and public agencies for 45 days to provide comments on the "sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated" (14 CCR 15204). Digital Copies of the Draft PEIR/PEIS, Specific Plan, and Appendices are available from **August 3, 2020 through September 17, 2020** via the Department website http://www.longbeach.gov/lbds/planning/environmental/reports/ or upon request by email or phone. Pursuant to the Governor's Executive Order and the local, state and federal state of emergency, physical copies are not being made publicly available and distribution to libraries and other facilities is not possible do to the closure of those facilities. The City will make accommodations, upon request, to individuals not able to access the electronic version of the document. During this period, comments from the general public, organizations,

and agencies regarding environmental issues analyzed in the Draft PEIR/PEIS and the Draft PEIR/PEIS's accuracy and completeness may be submitted to the lead agency at the following address:

City of Long Beach
411 West Ocean Boulevard, 3rd Floor
Long Beach, California 90802
Attn: Maryanne Cronin, Planner
LBDS-EIR-Comments@longbeach.gov

As the lead agency for the Proposed Project, the City has assumed responsibility for preparing this document. The decision to consider the Proposed Project within the purview of the City Planning Commission and City Council. The City will use the information included in this PEIR/PEIS to consider potential impacts to the physical environment associated with the GCSP when considering approval of the Proposed Project. As set forth in Section 15021 of the State CEQA Guidelines, the City, as lead agency, has the duty to avoid or minimize environmental damage where feasible. Furthermore, 14 CCR 15021(d) states that:

> *CEQA recognizes that in determining whether and how a project should be approved, a public agency has an obligation to balance a variety of public objectives, including economic, environmental, and social factors and in particular the goal of providing a decent home and satisfying living environment for every Californian. An agency shall prepare a statement of overriding considerations as described in Section 15093 to reflect the ultimate balancing of competing public objectives when the agency decides to approve a project that will cause one or more significant effects on the environment.*

Prior to approval of the Proposed Project, the City, as the lead agency and decision-making entity, is required to certify that this PEIR/PEIS has been completed in accordance with CEQA and NEPA, that the Proposed Project has been reviewed and the information in this PEIR/PEIS has been considered, and that this PEIR/PEIS reflects the independent judgment of the City. CEQA also requires the City to adopt "findings" with respect to each significant environmental effect identified in the EIR) (Pub. Res. Code Section 21081; Cal. Code Regs., Title 14, Section 15091). For each significant effect, CEQA requires the approving agency to make one or more of the following findings:

- The Proposed Project has been altered to avoid or substantially lessen significant impacts identified in the Final EIR.
- The responsibility to carry out such changes or alterations is under the jurisdiction of another agency.
- Specific economic, legal, social, technological, or other considerations, which make infeasible the mitigation measures or alternatives identified in the Final EIR.

If the City concludes that the Proposed Project will result in significant effects that cannot be substantially lessened or avoided by feasible mitigation measures and alternatives, the City must adopt a "statement of overriding considerations" prior to approval of the Proposed Project (Pub. Res. Code Section 21081 (b)). Such statements are intended under CEQA to provide a written means by which the lead agency balances in writing the benefits of the Proposed Project and the significant and unavoidable environmental impacts. Where the lead agency concludes that the economic, legal, social, technological, or other benefits outweigh the unavoidable environmental impacts, the lead agency may find such impacts "acceptable" and approve the Proposed Project.

In addition, public agencies, when approving a project, must also adopt a Mitigation Monitoring and Reporting Program (MMRP)/Environmental Commitments Record (ECR) describing the changes that were incorporated into the Proposed Project or made a condition of project approval in order to mitigate or avoid significant effects on the environment (Pub. Res. Code Section 21081.6). The MMRP/ECR is adopted at the time of project approval and is designed to ensure compliance during project implementation. Upon approval of the Proposed Project, the City will be responsible for implementation of the Proposed Project's MMRP/ECR. This document will be attached to the Final PEIR/PEIS.

In accordance with CEQA, if the City Council decides to approve the Proposed Project, it will be required to make findings for each environmental impact of the project that cannot be mitigated to a less than significant level. In accordance with NEPA, if the City Council approves the Proposed Project, the City would prepare a Record of Decision. If the City determines that the benefits of the Proposed Project outweigh unmitigated, significant environmental effects, the City will be required to adopt a statement of overriding considerations stating the reasons supporting its action notwithstanding the Proposed Project's significant environmental effects.

1.5 PEIR/PEIS ORGANIZATION

This PEIR/PEIS is organized as follows:

An **Executive Summary** of the PEIR/PEIS is provided at the beginning of this document. This summary outlines the conclusions of the environmental analysis and provides a summary of the Proposed Project and the project alternatives analyzed in the PEIR/PEIS. This section also includes a table summarizing all environmental impacts identified in this PEIR/PEIS along with the associated mitigation measures proposed to reduce or avoid each impact.

Chapter 1.0, Introduction, serves as a forward to this PEIR/PEIS, introducing the project, the applicable environmental procedures, and the organization of the PEIR/PEIS.

Chapter 2.0, Project Description, provides a thorough description of the Proposed Project elements, the purpose and need for the project, project objectives, and required discretionary

approvals This chapter also includes a description of the intended uses of the PEIR/PEIS and public agency actions.

Chapter 3.0, Environmental Analysis, describes the potential environmental effects of the Proposed Project, as well as proposed mitigation measures to reduce or avoid any potentially significant impacts. The discussion in Chapter 3.0 is organized by seventeen environmental issue areas as follows:

- Aesthetics
- Air Quality
- Cultural Resources
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Environmental Justice
- Energy

For each environmental issue area, the analysis and discussion are organized into seven subsections as described below:

- **Existing Conditions -** This subsection describes the physical environmental conditions in the vicinity of the Proposed Project at the time of publication of the NOP. The environmental setting establishes the baseline conditions by which the City will determine whether specific Project-related impacts are significant.
- **Regulatory Setting –**This subsection describes the regulatory setting applicable to the environmental issue area and the Proposed Project at the time of publication of the NOP.
- **Thresholds of Significance –** This subsection identifies a set of thresholds by which the level of impact is determined. Thresholds that were eliminated from further review in the PEIR/PEIS as part of the IS analysis will be identified here.
- **Impacts Analysis –** This subsection provides a detailed analysis regarding the environmental effects of the Proposed Project evaluated under CEQA and NEPA guidance, and whether the impacts of the Proposed Project would meet or exceed the established significance criteria.
- **Cumulative Impacts –** This subsection discusses the cumulative effects of the Proposed Project in combination with the effects of other projects in the vicinity.

- **Mitigation Measures –** This subsection identifies potentially feasible mitigation measures that would avoid or substantially reduce significant adverse Proposed Project impacts.
- **Level of Significance After Mitigation –** This subsection discusses whether project-related impacts would be reduced to below a level of significance with implementation of the mitigation measures identified in the PEIR/PEIS. If applicable, this subsection also identifies any residual significant and unavoidable adverse effects of the Proposed Project that would result even with implementation of mitigation measures.

In addition to the seven subsections listed above, full citations for all documents referred to in each environmental issue area discussion are included at the end of each section or chapter (*References*).

Chapter 4.0, Alternatives, discusses alternatives to the Proposed Project, including a No Project Alternative. This subsection describes the rationale for selecting the range of alternatives discussed in the PEIR/PEIS and identifies the alternatives considered by the City that were rejected from further discussion as infeasible during the scoping process. Lastly, Chapter 4.0 includes a discussion of the environmental effects of the alternatives that were carried forward for analysis and identifies the environmentally superior alternative.

Chapter 5.0, Other CEQA Requirements, addresses if there are any significant environmental effects that cannot be avoided, any significant irreversible environmental changes that would result from implementation of the Proposed Project, and any growth-inducing impacts associated with the Proposed Project.

Chapter 6.0, List of Preparers, gives names and contact information of those responsible for writing this PEIR/PEIS.

Appendices include various technical studies prepared for the Proposed Project, as listed in the Table of Contents.

The City, as the designated lead agency for the Proposed Project, is responsible for enforcing and verifying that each mitigation measure is implemented as required; however, the future project applicants shall be responsible for implementing the mitigation measures as required by the Proposed Project. As part of the Final PEIR/PEIS process, a mitigation monitoring and reporting program will be prepared.

CHAPTER 2.0
PROJECT DESCRIPTION

2.1 INTRODUCTION

The Globemaster Corridor Specific Plan (GCSP; Proposed Project) provides a framework for the development and improvement of the 437-acre Plan Area, located in the north-central portion of the City of Long Beach (City) on the west and south sides of the Long Beach Airport.

The applicant is the City of Long Beach. The City has developed the GCSP as part of a comprehensive transition program in the wake of the closure of the C-17 Globemaster military aircraft production facility owned by the Boeing Corporation (C-17 Site). The GCSP will build upon the work developed during phase one of the C-17 Transition Master Plan in 2016, and will provide a strategic planning framework for attracting quality industries and improving the character, design, and functionality of the Plan Area. The C-17 Site is located on the east side of Cherry Avenue adjacent to the west side of the Long Beach Airport. The central portion of the Plan Area encompasses the approximately 93-acre former Boeing aircraft manufacturing facilities, while the remainder of the Plan Area includes industrial and commercial corridors and nodes along Cherry Avenue and Spring Street.

Building on the legacy of the Boeing aircraft manufacturing industry and the high-quality jobs it provided, the GCSP aims to continue to attract and optimize new work opportunities to retain the regional skills base, expertise, and competitive economies of Long Beach Airport, the City of Long Beach, and the Southern California region. The GCSP represents the next step in the overall transition of the former Boeing C-17 Site and surrounding Plan Area. The GCSP assigns appropriate land use districts for land properties within the Plan Area, including six development districts and two overlay zones. The GCSP establishes a land use and mobility plan, land use and development regulations, urban design guidelines, infrastructure systems, and implementation strategies necessary to becoming a flexible commercial and industrial district in the City. No residential component is included in the GCSP.

2.2 BACKGROUND

Impacts of the C-17 Site Closure

In September 2013, the Department of Defense notified Boeing, manufacturer of the C-17 Globemaster military aircraft, that it would no longer place future orders for the C-17. In April 2014, Boeing announced it would close C-17 production plants by mid-2015 due primarily to the termination of Department of Defense contracts, which represented the single largest demand for the aircraft. Boeing closed the C-17 Site in December 2015. At its peak, the C-17 Site employed up to 5,000 people; however, since 2010, Boeing has steadily downsized the C-17 workforce in anticipation of the closure.

A study conducted by Economic Modeling Specialists International anticipated that the closure of the C-17 Site would result in an overall loss of nearly 5,000 jobs. This includes the elimination of approximately 1,600 Boeing jobs at the C-17 production site, plus an estimated 3,800 jobs in the related supply chain. EMSI's analysis shows that for every laid-off Boeing employee, 2.68 jobs in other industries will also disappear (a job multiplier of 3.68). The EMSI study also estimated that the closure would result in a $417 million reduction in regional earnings, $190 million of which stem from the jobs removed at the facility. Aside from manufacturing, engineering, and project management jobs within the aerospace/defense sector, other job losses are anticipated to occur in the service realm, including health care; retail trade; professional, scientific, and technical services; accommodation and food services; and administrative support services.

Department of Defense Grant

In anticipation of the C-17 Site closure and the potential effects the closure would have on the City and its surroundings, the City applied for and was awarded a grant from the Department of Defense Office of Economic Adjustments to prepare and implement the Boeing C-17 Transition Master Plan.

The City identified the following three separate activity tracks for the preparation of the C-17 Transition Master Plan:

1. **Economic Development Planning** – Activities under this track focused on the economic development planning necessary to adjust effectively to impacts from Boeing facility closures and identify opportunities to advance the site, the supply chain, and the regional cluster in a forward direction.
2. **Land Use and Infrastructure Planning** – Activities under this track focused on an assessment of the existing conditions of the C-17 Site, with specific attention on compatibility and the operational needs of the Long Beach Airport, as well as conceptual reuses of the site and prospective site development opportunities. Preparation and adoption of the Specific Plan that is the subject of this Program Environmental Impact Report/Environmental Impact Statement (PEIR/PEIS) implements this track.
3. **Assistance to Impacted Defense Firms and Workers** – Activities under this track focused on assistance to impacted firms and workers. Since announcing its closure in 2013, Boeing has worked with partners such as the City, Pacific Gateway, Los Angeles County Economic Development Corporation, and other groups to help transition both its individual workers and the regional sector as a whole. This track will establish a Boeing and defense dislocated worker case-management tracking and training program, and directly assist impacted suppliers through the City's existing contract with the California Manufacturing Technology Center (CMTC). Interaction with parallel efforts to dispose of excess C-17 production tooling and equipment is also a component of this track.

The C-17 Transition Master Plan resulted in a detailed analysis of existing economic, land use, and infrastructure conditions in the Plan Area; alternative land use scenarios for the C-17 Site; and a planning and urban design framework for the Plan Area's C-17 Transition Master Plan. Other recently completed or current City plans include the Draft Land Use Element EIR, the recently completed EIRs for the Midtown Specific Plan and Southeast Area Specific Plan (SEASP), and the Noise Element and Climate Action and Adaptation Plans that are currently underway in the City.

As the results of the C-17 Transition Master Plan revealed the need for comprehensive planning that addressed land use, economic development, and infrastructure improvements in the Plan Area, the City determined that a Specific Plan was the appropriate tool to approach each need holistically. The GCSP provides a combined land use and mobility plan, development regulations, and design guidelines, as well as implementation measures that work together to advance the objectives of the C-17 Transition Master Plan.

The GCSP builds upon the C-17 Transition Master Plan to provide a strategic planning framework for attracting quality industries and improving the character, design, and functionality of the Plan Area.

2.3 PROJECT LOCATION

The Plan Area is located in the central portion of the City of Long Beach, bordering the Long Beach Airport to the west and south, and the cities of Lakewood and Signal Hill to the north and south, respectively. The Plan Area is approximately 3 miles northeast of downtown Long Beach. The Port of Long Beach, the second busiest port in the United States and a twin of the number one busiest port of Los Angeles, is located 8 miles south and is also owned and operated by the City. The Plan Area is afforded direct access from Interstate 405 (I-405) via Cherry Avenue, providing easy access and high visibility to the area from a regional standpoint. Figure 2-1, Regional Context, shows a map of the Plan Area in its regional context.

The Plan Area totals approximately 437 acres. Cherry Avenue and Spring Street form its central unifying spines. The historic California Heights District and the Bixby Knolls neighborhoods are located to the west of Cherry Avenue. To the east of the Plan Area, on the opposite site of the airport, is the Skylinks Golf Courses and the Long Beach City College (LBCC) Liberal Arts Campus. Figure 2-2, Local Context, provides a map of the Plan Area's local context.

2.4 ENVIRONMENTAL SETTING

2.4.1 Existing Land Uses

The Plan Area and surrounding area is characterized as a developed urban area comprised of commercial, industrial, and residential uses. The most prominent land use adjacent to the Plan Area is the Long Beach Airport, which is generally located east of the Plan Area. The Plan Area is highly disturbed and consists primarily of commercial and industrial uses with some vegetation and small amounts of unpaved areas.

The Plan Area consists of a variety of low- to mid-rise commercial and industrial uses. Land uses are supported by a streetscape context largely auto-oriented in nature, and lacking in street trees and other pedestrian amenities. Figure 2-3, Existing Land Uses, illustrates the pattern of existing land uses within the Plan Area and surrounding area as of 2017.

Northern Area – Auto-Oriented Commercial

The Northern Area is occupied by single-story auto-oriented commercial uses, including auto-oriented service shops, car dealerships, and strip commercial centers. The Long Beach Town Square shopping center is the largest shopping center in the area.

Central Core Area – Industrial

The Central Core Area is home to primarily industrial uses, including the former Boeing C-17 Site comprised of approximately 1.1 million square feet (approximately 25 acres) of enclosed aerospace manufacturing production space and associated buildings. To the east of these buildings are airport-owned property used for airport-related uses and taxiing planes to the runways. Along Cherry Avenue in the central core are industrial uses and auto-oriented commercial establishments such as fast-food restaurants; car wash, rentals and sales; and a gas station.

Southern Area – Commercial/Industrial

The Southern Area includes primarily large scale industrial operations and warehouses west of Cherry Avenue. East of Cherry Avenue, uses transition to more commercial/office related businesses, including a new multistory office building, motorcycle dealership and a new retail center.

Southeastern Area – Industrial

The Southeastern Area north of Spring Street is airport-owned and comprised of aircraft buildings, including the Pilot Shop, Long Beach Flying Club, the Daughtery Sky Harbor building, and ATP Flight School. South of Spring Street consists of warehouse and construction.

2.4.2 Surrounding Land Uses

The Plan Area is surrounded almost entirely by development, consisting of residential, industrial, and commercial land uses, including the Long Beach Airport. The City of Signal Hill and the City of Lakewood are located immediately adjacent to the Plan Area. Specific land uses surrounding the Plan Area are detailed below:

North: The Plan Area extends north along Cherry Avenue and past Carson Street. The land use to the northwest of the Plan Area consists of single-family residential uses. A self-storage

facility and the All Souls Cemetery are directly north of the Plan Area. The Long Beach Airport also extends north of the Central Core of the Plan Area.

South: Industrial and commercial land uses within the City of Signal Hill are located directly south of the Plan Area. Additionally, an open space area associated with Willow Springs Park is located south of the Plan Area. The Long Beach Airport also extends south of the Plan Area.

East: The majority of the eastern boundary of the Plan Area is adjacent to the Long Beach Airport. The City of Lakewood is adjacent to the Plan Area to the northeast. Land uses in this part of the City of Lakewood include industrial properties, as well as a small amount of medium-density to high-density residential and low-density residential uses. The I-405 freeway passes through the Plan Area and continues southeast of the Plan Area.

West: The majority of the land located west of the Plan Area consists of single-family residential uses. The neighborhood adjacent to the Plan Area is California Heights, which is within the Bixby Knolls Community Plan Area. California Heights is a locally-designated historic district where Spanish Colonial style homes were built in the 1920s and 1930s, coinciding with the discovery of oil at Signal Hill. The City of Signal Hill borders the southwestern portion of the Plan Area and includes commercial and industrial land uses, as well as a small amount of low-density to medium-density residential uses, Reservoir Park (a small open space area associated with Gundry Reservoir), and Burroughs Elementary School. Additionally, the I-405 freeway passes through the Plan Area and continues west of the Plan Area.

2.4.3 Policy Context

Draft General Plan

The Notice of Preparation (NOP) and IS/EA for this PEIR/PEIS was distributed to the State Clearinghouse, interested agencies, and groups on September 12, 2018. At the time of issuance of the NOP, the City was in the process of updating the Land Use Element of the General Plan. The existing Land Use Element was last comprehensively updated in 1989. The 1989 General Plan identified the majority of the Plan Area as 9G (General Industry). Figure 2-4, General Plan Designations, depicts the prior general plan land uses and proposed general plan land uses for the City.

As shown in Figure 2-4, the northern portion to the east of Cherry Avenue, within the Plan Area, was designated as 9R (Restricted Industry), 8A (Traditional Retail Strip Commercial), and 1 (Single Family). The central portion of the Plan Area, east of Cherry Avenue, was designated 12 (Harbor/Airport), which requires special planning documents (i.e., an Airport Layout Plan) to govern land use development, and 9G (General Industry). The central portion of the Plan Area, to the west of

Cherry Avenue the Plan Area was designated 1 (Single-Family) and 8M (Mixed Office/Residential Strip). South of the I-405 freeway, which is designated 13 (Rights-Of-Way), the Plan Area was designated 9G (General Industry), 8A (Traditional Retail Strip Commercial), and 11 (Open Space/Parks). The southeast portion of the Plan Area was designated 12 (Harbor/Airport) and 9G (General Industry) (City of Long Beach 1989).

On December 3, 2019, the City Council adopted a resolution adopting the updated Land Use Element to the Long Beach General Plan, replacing the existing Land Use Element comprised of policies and the adopted General Plan Land Use Designation maps, with the updated Land Use Element, including revised policies and the PlaceType and Height maps. Figure 2-4, General Plan Designations, depicts the updated 2040 PlaceType and Height Standards approved.

As also shown on Figure 2-4, the northern portion of the Plan Area east of Cherry Avenue is designated Community Commercial and Founding and Contemporary Neighborhood. The central portion of the Plan Area, east of Cherry Avenue, is designated Regional-Serving Facilities, Community Commercial, Industrial, and Community Commercial. The central portion of the Plan Area, west of Cherry Avenue, is designated Neighborhood Serving Center or Corridor Low density, Community Commercial, Neo Industrial, and Industrial. South of the I-405 freeway, the Plan Area is Community Commercial, Industrial, Neo Industrial, and Open Space. The southeast portion of the Plan Area is designated Regional Serving Facility (City of Long Beach 2019).

Existing Zoning

The Zoning Regulations (Title 21 of the Long Beach Municipal Code), in conformance with the General Plan, regulates land use development within the City. Within each zoning district, the Zoning Regulations specify the permitted and prohibited uses, as well as the development standards, including setbacks, height, parking, and design standards, among others. Figure 2-5, Existing Zoning, identifies the current zoning in the Plan Area.

As shown in Figure 2-5, the northern portion of the Plan Area to the east of Cherry Avenue is zoned as IL (Light Industrial), CHW (Regional Highway Commercial), CS (Commercial Storage), and CCA (Community Commercial Automobile-Oriented). The central portion of the Plan Area, east of Cherry Avenue, is zoned IG (General Industrial) and Douglas Aircraft Planned Development District (PD-19) zoning area. The central portion of the Plan Area, west of Cherry Avenue, is zoned IG (General Industrial), CNA (Neighborhood Community Automobile-Oriented) R-1-N (Single-family Residential, standard lot), and IL (Light Industrial). South of the I-405 freeway, the Plan Area is designated IM (Medium Industrial), IL (Light Industrial), CCA (Community Automobile-Oriented Commercial), and P (Park). The southeast portion of the Plan Area is zoned IG (General Industrial), and PD-13 (Atlantic Aviation Center Planned Development District).

2.4.4 Airport Compatibility

The proximity of the Plan Area to the Long Beach Airport will require compatibility between GCSP land uses and airport operations. The GCSP would comply with airport compatibility standards set forth by the 2011 Caltrans California Airport Land Use Planning Handbook (2011 Handbook), 2004 Los Angeles County Airport Land Use Plan (2004 CALUP), and Federal Aviation Administration (FAA) guidelines. The 2011 Handbook requires each County's Airport Land Use Commission (ALUC) to prepare an ALUP. In Los Angeles County, the Regional Planning Commission acts as the ALUC for all public use airports in the County. The compatibility criteria adopted by the ALUC for the Long Beach Airport are intended to protect the airport from encroachment by future incompatible land uses. Within the 2004 CALUP planning boundaries, certain proposed local land use actions must be submitted to the ALUC for review. The 2004 CALUP was prepared in conformance with the 2011 Handbook and FAAs guidelines at the time. However, the current 2004 CALUP for the Long Beach Airport is outdated and does not fully reflect the compatibility guidance provided in the 2011 Handbook. For example, the 2011 Handbook provides a set of generic safety zones and land use criteria for each safety zone. The Long Beach Airport 2004 CALUP does not include this safety compatibility criteria. Therefore, reference to both the 2004 CALUP and 2011 Handbook will be made.

Additionally, to ensure protection of the airspace essential to the safe operation of aircraft at and around airports, the FAA has established a process that requires project sponsors to inform the FAA about proposed construction that could affect navigable airspace. The standards by which the FAA conducts these aeronautical studies are set forth in Part 77 of the Federal Aviation Regulations (FAR), Objects Affecting Navigable Airspace. The height of development is subject to compatibility with the airport land use and applicable restrictions of the 2011 Handbook and FAR. During the Site Plan Review (SPR) process, the applicant must complete and submit all required forms (including Form 7460-1) to the FAA for a determination of no hazard to air navigation. Prior to issuance of a building permit, a copy of all written findings from the FAA regarding compliance with Part 77, height limit regulations related to the Long Beach Airport, shall be provided to the SPR Committee. Development projects in the FAA regulated height areas that are near or approach height limits, or any structures over certain elevations above ground level, would be required to file a Notice of Proposed Construction or Alteration with the FAA and otherwise provide compliance as required by the FAR and conformance to the recommendations of the 2011 Handbook. A project would not be permitted to proceed to the construction phase until compatibility with all applicable federal and local requirements related to air traffic and airport operations is demonstrated to the satisfaction of the City.

For compatibility planning purposes, four aeronautical factors are considered:

- **Noise** is the impact most directly affected by the airport activity forecasts. The City's Airport Noise Compatibility Ordinance (Long Beach Municipal Code [LBMC] 16.43) and land use patterns protect noise-sensitive land uses (e.g., residences, schools, nursing homes, etc.) from being exposed to aircraft-related noise levels in excess of 65 decibels (dB) CNEL. The majority of the Plan Area is outside of the airport's 65 dB CNEL contour (CALUC 2004).
- **Overflight** pertains to areas beyond the noise contours where aircraft noise can be annoying or disruptive. Locations underlying the airport's typical traffic patterns are considered to be within the airport's overflight impact area. Section V Statement of Land Use Compatibility, of the 2004 CALUP, identifies the compatibility of certain types of land uses within areas exposed to aircraft-related noise, which should be used to evaluate projects within the ALUC's planning boundary (CALUC 2004).
- **Safety** is concerned with the risks that potential aircraft accidents or emergency landings pose to people and property on the ground. The 2011 Handbook provides a set of safety zones that delineate the locations where heightened risk levels may warrant restrictions on land use development.
- **Airspace protection** is critical to airport viability in that airspace obstructions can be hazardous to flight and can necessitate changes to aircraft flight procedures. Hazards to airspace include physical (e.g., tall structures, thermal plumes, etc.), visual (e.g., light, glare, dust, steam or smoke), and electronic (i.e., hazards that may cause interference with aircraft communications or navigation). The FAA has well-defined standards by which potential hazards to flight, especially airspace obstructions can be assessed. Height restrictions, as per FAA standards, range from a maximum of 36 feet in areas closest to the airport, to a maximum of 176 feet towards the outer boundaries of the Plan Area. Actual height restrictions per the City's zoning development standards may be more restrictive than 176 feet.

2.4.5 Mobility

Street Network

The existing circulation network in the Plan Area is essentially a grid system of roadways generally oriented in the north–south and east–west directions. The I-405 freeway, Cherry Avenue, Carson Street, Spring Street, Bixby Road and Wardlow Road provide primary connectivity to local and regional areas. The main users for these facilities are commuters with major destinations occurring to/from the freeways and airport facilities. Due to the auto-orientation of the land uses in the Plan Area, there is not an emphasis in the overall block structure and public realm to support pedestrian,

bicycle, and other modes of active transportation. Unlike the grid pattern that exists in the blocks west of the Plan Area, the Plan Area lacks continuous sidewalks that allow for pedestrian mobility. Most streets in the Plan Area lack features and amenities such as shading, bike racks, benches, and bus shelters that are needed to support a multi-modal transportation network. The principal local network of streets serving the Plan Area includes Lakewood Boulevard, Willow Street, Cherry Avenue, Carson Street, Atlantic Avenue, Spring Street, Wardlow Road, Orange Avenue, Cover Street, Bixby Road, 32nd Street, 36th Street, Walnut Avenue, Temple Avenue, and Redondo Avenue. The following discussion provides a brief synopsis of these key area streets. The descriptions are based on an inventory of existing roadway conditions.

- **Lakewood Boulevard** is generally an eight-lane roadway south of Conant Street and a six-lane roadway north of Conant Street oriented in the north–south direction and is located east of the Plan Area and airport. On-street parking is not permitted on both sides of the street. Sidewalks are generally provided on both sides of the roadway within the project vicinity. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Lakewood Boulevard as a Regional Corridor.
- **Willow Street** is generally a six-lane divided roadway oriented in the east-west direction and provides connectivity between Atlantic Avenue and Lakewood Boulevard within the vicinity of the Plan Area. On-street parking is generally not permitted on either side of the roadway within the vicinity of the project. The posted speed limit on Willow Street is 40 mph. Sidewalks are generally provided on both sides of the roadway within the Proposed Projects' vicinity. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Willow Street as a Boulevard.
- **Cherry Avenue** is generally a four-lane, divided roadway separated by a two-way left-turn lane, oriented in the north-south direction that traverses through the middle of the Plan Area. On-street parking is permitted on both sides of the street. Multiple driveways are located along Cherry Avenue, which provide full access to the existing businesses. Sidewalks are generally provided and are adequate north of Wardlow Road. However, south of Wardlow Road, sidewalks are generally located on one side of the road or missing altogether. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Cherry Avenue as a Major Avenue.
- **Carson Street** is a four-lane divided roadway west of Cherry Avenue and a six-lane divided roadway east of Cherry Avenue. Carson Street is oriented in the east–west direction and provides connectivity from Atlantic Avenue to Lakewood Boulevard within the vicinity of the Plan Area. On-street parking is not permitted on both sides of the street east of Cherry Avenue, but is permitted on both sides of the street west of Cherry Avenue within the vicinity of the Plan Area. The posted speed limit on Carson Street is 40 miles per hour (mph). Sidewalks are generally provided on both sides of the roadway within the Proposed

Project vicinity. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Cover Street as a Major Avenue.

- **Atlantic Avenue** is a four-lane, divided roadway oriented in the north-south direction and provides connectivity west of the Plan Area. The posted speed limit is 35 mph south of Spring Street and 30 mph north of Spring Street. Parking is generally not permitted on both sides of the roadway within the vicinity of the project. Sidewalks are generally provided on both sides of the roadway within the Proposed Project vicinity. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Lakewood Boulevard as a Major Avenue.
- **Spring Street** is generally a four-lane roadway with a center turn island. Spring Street is oriented in the east–west direction and provides a major point of access to the Plan Area from the south. On-street parking is permitted on both sides of the street. Multiple driveways are located along Spring Street, which provide full access to the existing businesses. Sidewalks are provided on both sides of the street in the Plan Area. Crosswalks are provided at all signalized intersections. The City's Mobility Element designates Spring Street as a Major Avenue in the Plan Area.
- **Wardlow Road** provides east–west connectivity between Cherry Avenue and Walnut Avenue. Wardlow Road also extends to the eastern portion of the Plan Area and terminates at the airport. However, Wardlow Road continues just east of Lakewood Boulevard. On-street parking is generally permitted on both sides of the street, west of Cherry Avenue. Sidewalks are generally provided on both sides of the roadway within the Proposed Project vicinity. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Wardlow Road as a Minor Avenue.
- **Orange Avenue** is a two-lane, divided roadway oriented in the north-south direction that traverses through the south-western portion of the Plan Area. The posted speed limit is 35 mph north of Spring Street and 40 mph south of Spring Street. On-street parking is generally not permitted on both sides of the roadway, except north of 32nd Street where parking is permitted within the vicinity of the project. Sidewalks are generally provided and are adequate north of Spring Street. However, south of Spring Street sidewalks are generally located on one side of the road or missing altogether. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Orange Avenue as a Minor Avenue.
- **Cover Street** is oriented in the east–west direction and provides connectivity between Cherry Avenue and Lakewood Boulevard. On-street parking is not permitted on both sides of the street. Sidewalks are generally provided on both sides of the roadway within the project vicinity. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Cover Street as a Neighborhood Connector.

- **Bixby Road** is generally a two-lane undivided roadway oriented in the east–west direction and provides connectivity between west of Cherry Avenue. On-street parking is permitted on both sides of the street. The posted speed limit on Bixby Road is 25 mph. Sidewalks are generally provided on both sides of the roadway within the Proposed Project vicinity. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Cover Street as a Neighborhood Connector.
- **32nd Street** is oriented in the east–west direction. In direct proximity to the site, 32nd Street consists of an alleyway that traverses the Plan Area. Along this alleyway, multiple gated areas restrict through-traffic to some users. Sidewalks are generally provided and are adequate west of Orange Avenue. However, east of Orange Avenue, sidewalks are generally located on one side of the road or missing altogether. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates 32nd Street as a Local Street.
- **36th Street** is a two-lane undivided roadway oriented in the east-west direction and provides connectivity between Cherry Avenue and Walnut Avenue. 36th Street also extends to the eastern portion of the Plan Area and terminates at the airport. On-street parking is generally permitted on both sides of the street. The posted speed limit on 36th Street is 25 mph. Sidewalks are generally provided on both sides of the roadway within the Proposed Project vicinity. Crosswalks are generally provide at all signalized intersections. The City's Mobility Element designates 36th Street as a Local Street.
- **Walnut Avenue** is oriented in the north–south direction and provides access to the site via multiple full-access driveways. On-street parking is permitted on both sides of the street. Sidewalks are generally provided and are adequate north of 33rd Street. However, south of 33rd Street, sidewalks are generally located on one side of the road or missing altogether. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Walnut Avenue as a Local Street.
- **Temple Avenue** is oriented in the north-south direction beginning just south of the Long Beach Airport at Spring Street and continuing south towards Bluff Park at Ocean Boulevard. Temple Avenue is a two-lane roadway that has discontinuous sidewalks on either side. There is only a sidewalk on the west side of Temple Avenue in the Plan Area. A portion of the Plan Area includes the I-405 freeway overpass at Temple Avenue, which connects the Long Beach Airport industrial areas with other industrial uses to the south of the I-405 freeway. The City's Mobility Element designates Temple Avenue as a Neighborhood Connector.
- **Redondo Avenue** is oriented in the north-south direction beginning just south of the Long Beach Airport at Spring Street and continuing south towards Bluff Park at Ocean Boulevard. Redondo Avenue is a two-lane roadway that connects industrial portions of

Long Beach near the I-405 freeway and the Plan Area with the residential portions moving towards the coast. Sidewalks are provided on both sides of the street in the Plan Area. The roadway borders the City of Signal Hill on its eastern boundary. The City's Mobility Element designates Redondo Avenue as a Major Avenue.

Truck Routes

Designated truck routes provide for the regulated movement of truck traffic through the City, and minimizes intrusion of truck traffic in sensitive areas, such as residential neighborhoods. The designation of truck routes are intended to direct truck traffic to those streets where they would cause the least amount of neighborhood intrusion and where noise, vibration, and other factors would have the least impact. Primary truck routes in close proximity to the Plan Area are provided via Cherry Avenue, Lakewood Boulevard, Carson Street, Spring Street, and Orange Avenue. Regional freeway access is provided at the Cherry Avenue/I-405 freeway interchange.

Transit Service

Transit modes in the City consist of both light rail and bus routes. Within the City, the Los Angeles County Metropolitan Transportation Authority (Metro) operates the Metro Blue Line, a passenger light rail line, which provides connection between Downtown Long Beach and Downtown Los Angeles. There are no Metro Blue Line stations in the Plan Area, and the nearest station is the Willow Street Station (approximately 0.6-miles southwest from the Plan Area).

The bus lines servicing the City consist of Long Beach Transit (LB Transit), Los Angeles County Metro, and Orange County Transit Authority (OCTA). LB Transit provides service throughout Long Beach, Lakewood, and Signal Hill. Most LB Transit routes run seven days a week and all routes are wheelchair accessible. There are four routes that travel to and from the Long Beach Airport, providing connections with the Metro light rail service to Los Angeles, El Segundo, and Norwalk, as well as to all Long Beach neighboring cities: Carson, Compton, Paramount, Bellflower, Artesia, Cerritos, Hawaiian Gardens, and Norwalk.

The Plan Area is serviced via LB Transit Lines 21, 22, and 131, which travel along Cherry Avenue and have stops at Carson Street and Wardlow Road.

- **LBT Line 21/22** operates between the northern and southern limits of the City. A major destination includes downtown Long Beach. In general, travel times from the Plan Area to downtown Long Beach would take around 30 minutes. Headways between buses vary throughout the day, but they typically arrive on 30-minute intervals.
    - **Line 21** Service is provided Monday through Friday from approximately 5:00 AM to 12:35 AM and on Saturdays/Sundays from 5:25 AM to 12:35 AM.

  - **Line 22** Service is provided Monday through Friday from approximately 5:20 a.m. to 7:05 p.m. and on Saturdays/Sundays from 6:00 a.m. to 8:05 p.m.

- **LBT Line 131** operates between Redondo Beach and Seal Beach. Major destinations along Line 131 include the Wardlow Metro Blue Line Station, Belmont Shore, and Alamitos Bay. Service is provided Monday through Friday from approximately 6:39 a.m. to 9:06 p.m. and on Saturdays/ Sundays from 6:38 a.m. to 8:40 p.m. In general, travel times from the Plan Area to the Wardlow Metro Blue Line Station, Belmont Shore, and Alamitos Bay would take around 10 minutes, 15 minutes, and 50 minutes, respectively. Headways between buses vary throughout the day, but they typically arrive on 30-minute intervals.

Bicycle Network

In early 2010, the City earned an innovation award from the Institute of Transportation Engineers (ITE) for the installation of the City's green lane project in Belmont Shore, which installed sharrows, bike boxes, and green bike lanes. In addition, the City has implemented wayfinding information for cyclists. The City has over 60 miles of off-street bike and pedestrian paths. Significant paths include Shoreline Pedestrian/Bicycle Path, Los Angeles River Bike Trail, San Gabriel River Bike Trail, El Dorado Park Bike Path, and Heartwell Park Bike Path.

The City of Long Beach Bicycle Master Plan outlines a vision that increases to increase the proportion of trips made my bicycle to increase by 10% each decade until 2040. The Bicycle Master Plan includes the provision of 200 miles of new bikeways. The Bicycle Master Plan also includes polices to eliminate traffic related facilities by 2026 ("Vision Zero"). The local bicycle facilities within and in close proximity to the Plan Area are located along Spring Street, Bixby Road, Carson Street, Orange Avenue, and Cover Street. The existing bicycle network identified in Figure 3-7 of the Bicycle Master Plan designates each of these facilities as follows:

- Spring Street – Bicycle Lane (Class II), Bicycle Route (Class III-B and III-C), and Sharrow (Class III)
- Bixby Road – Bicycle Lane (Class II)
- Orange Avenue – Bicycle Lane (Class II) and Bicycle Route (Class III-B and III-C)
- Carson Street – Off-Street (Exclusive Right-of-Way)
- Cover Street – Class II Bike Lane and Off-Street (Exclusive Right-of-Way)

The Bicycle Master Plan identifies Backbone Next Step Facilities, which would stretch across the City from the northern border to the southern border, as well as the eastern border to the western border. The Orange Avenue Backbone Project would add 4 miles of Class IV parking protected

bike lanes that will close network gaps, and improve existing infrastructure throughout Orange and Alamitos Avenues improving safety, mobility, multi – modal connectivity and equality for bicyclist of all ages and abilities (8-80). Additionally, Spring Street has been identified as a Backbone Next Step Facility. The Bicycle Master Plan recommends network spot improvements at Carson Street and gap closure of bicycle facilities on Cover Street from Cherry Avenue to Heinemann Avenue.

Each of these bike lanes is part of a larger proposed interconnected bicycle network in the City.

2.4.6 Infrastructure Systems

The public utility purveyors include water, wastewater, stormwater, gas, and electric utilities. This section presents a breakdown of the existing public utility infrastructure, including any deficiencies, for the Plan Area and immediately adjacent surroundings.

Water

The Plan Area is locally serviced by the Long Beach Water District (LBWD), which serves as the retail water purveyor. LBWD acquires its drinking water from two main sources: groundwater pumped and treated from a large underground aquifer below the City, known as the Central Basin, and imported water purchased wholesale and delivered by the Metropolitan Water District of Southern California (MWDSC) as part of the California State Water Project. Approximately 42% of LBWD's total water supply is provided by groundwater with a small portion of their supply coming from reclaimed and recycled water that is used primarily to irrigate municipal landscapes. LBWD is also looking at plans to incorporate desalinated seawater as a future water source.

According to the 2015 Urban Water Management Plan (UWMP), LBWD has adequate supplies to meet projected demands throughout the 20-year planning period (through the year 2040) for a single dry-year supply and demand scenario and a multiple dry-year supply and demand scenario (City of Long Beach Board of Water Commissioners 2016).

The existing water pipe delivery network does appear to be older in age based on the utilized pipe materials, including ductile iron (DI), asbestos concrete, cast iron, cement mortar lined, and cement. Within the Plan Area and immediately adjacent service area, several large transmission water mains ranging from 20 to 36 inches in diameter exist along Cherry Avenue, Wardlow Road, Saint Louis Avenue, and 32nd Street. Smaller tributary water mains ranging from 8 to 12 inches in diameter exist along Globemaster Way, Gardenia Avenue, 33rd Street, and Walnut Avenue. An existing 12-inchdiameter water main is located along Orange Avenue between 29th Street and 32nd Street, and along Spring Street between Orange and Temple Avenues, with an existing 6-inch-diameter water main extending to the east of Temple Avenue that would service the southerly portion of the Plan Area. Ultimately, future PVC water improvements intended to service the Plan

Area will likely connect into the larger 20- to 36-inch transmission water mains located along Cherry Avenue, Wardlow Road, Saint Louis Avenue, and 32nd Street.

Wastewater

The LBWD also services the Plan Area for wastewater collection and treatment. The LBWD operates and maintains approximately 765 miles of sanitary sewer lines and ultimately delivers the majority of the City's wastewater to the Joint Water Pollution Control Plant (JWPCP) of the Los Angeles County Sanitation District (LACSD). The remaining portion of the City's wastewater is delivered to the Long Beach Water Reclamation Plant of the LACSD. Tertiary treated sewage from these facilities is used to irrigate public landscaping through the recycled water program and recharge the groundwater basin.

The wastewater infrastructure for the immediate Plan Area vicinity primarily consists of vitrified clay pipe (VCP). There are 18-inch-diameter VCP sewer trunk main lines along Cherry Avenue south of Wardlow Road, 15-inch-diameter sewer lines along 32nd Street east of Cherry Avenue, 12- to 18-inch-diameter sewer lines along Wardlow Road west of Cherry Avenue, 12-inch-diameter sewer lines along Walnut Avenue, and 10-inch-diameter sewer lines along AirFlite Way. In addition, 8-inch-diameter sewer mains exist on Wardlow Road east of Cherry Avenue, Globemaster Way, and various other locations locally. An existing 15-inch-diameter sewer main extends to the north along the westerly right-of-way of Union Pacific Railroad with existing 8- to 10-inch-diameter sewer mains west of the intersection of Cherry Avenue/ Carson Street that will service the northerly portion of the Plan Area. Future sewer mains to service the Plan Area will more than likely connect into the existing larger sewer trunk mains.

Storm Drain

The Los Angeles County Flood Control District (LACFCD) has jurisdiction over the Plan Area and provides stormwater collection and conveyance for a majority of the City. In the immediate Plan vicinity, as-built storm drain plans show a collection system commencing near the intersection of Spring Street and Lakewood Boulevard that traverses northwest to Wardlow Road and ultimately terminates near Orange Avenue. Pipe sizes for this particular section of storm drain system range from 66- to 96-inch-diameter reinforced concrete pipe (RCP) and includes a 9- by 7-foot rectangular reinforced concrete box (RCB) for a small portion. An adjacent storm drain collection system running north and south along Cherry Avenue between 33rd Street and 36th Street contributes to the larger storm drain system described previously, which has pipe sizes ranging from 33 to 48 inches in diameter RCP.

The existing storm drain system starting near the intersection of Walnut Avenue and Tehachapi Drive, which flows east to Cherry Avenue, then south to Bixby Road, then east along Bixby Road, will service the northerly portion of the Plan Area with RCP pipes ranging from 36 to 78 inches in diameter.

The existing storm drain system starting near the intersection of Walnut Avenue and 28th Street, which flows north to Spring Street then west to Orange Avenue, will service the southwesterly portion of the Plan Area with RCP pipes ranging from 30 to 54 inches in diameter. Future storm drain laterals to service the Plan Area will more than likely connect into the existing storm drain system.

Gas

Gas utilities are currently being serviced by the Long Beach Energy Resources (LBER) Department (formerly Long Beach Gas and Oil), a municipal utility that provides gas services to the Plan Area along with the majority of the City. Based on atlas maps provided by LBER, existing gas mains ranging from 10 to 20 inches are located in Cherry Avenue with 4-inch-diameter gas mains also available along the Plan Area perimeter.

Electric

Electric utilities are currently being serviced by Southern California Edison (SCE), which provides energy services to the Plan Area, the City, and the greater Southern California area. Based on an SCE interactive distribution map last updated September 14, 2012, three substations (5738, 5753, and 5785) service the Plan Area with overlapping coverage. According to the data, substation 5738 has a maximum available capacity of 7.75 megavolt amperes (MVA) but no current available capacity (0 MVA), substation 5753 has a maximum available capacity of 4.37 MVA but also no current available capacity (0 MVA), and substation 5785 has a maximum available capacity of 10.0 MVA and a currently available capacity of 0.9 MVA. Although all of the substations servicing the Plan Area appear to be at or near capacity, the existing system is sufficient to meet the existing demands of the existing land use.

2.5 STATEMENT OF PURPOSE AND NEED FOR THE PROPOSED PROJECT

In 2013, the Boeing Corporation announced it would end production of the C-17 Globemaster III military aircraft, causing the closure of the C-17 Site in the City of Long Beach. This closure resulted in the layoff of approximately 1,600 workers and caused additional economic impacts across the supply chain. In addition to the manufacturing, engineering, and project management jobs within the aerospace/defense sector, other job losses within the service realm will occur. Further, the C-17 Site closures leaves vacant a distinctive site, which includes a 1.2 million-square-foot enclosed production space adjacent to the Long Beach Airport. To address these impacts, the City has undertaken the C-17 Master Plan to provide economic development planning, land use and infrastructure planning, and assistance to impacted firms and workers. As the results of the C-17 Transition Master Plan revealed the need for comprehensive planning that addressed land use, economic development, and infrastructure improvements in the Plan Area,

the City determined that a Specific Plan was the appropriate tool to approach each need holistically. The GSCP meets the City's needs for a comprehensive planning tool to guide land use and infrastructure improvements to enhance the economic functionality of the Plan Area, following the C-17 Site closure.

The purpose of the GCSP is to provide the planning and regulatory framework for guiding future development and attracting quality jobs to the 437-acre Plan Area. The vision of the GCSP is to serve as a 21st Century innovation employment district. Building on the legacy of the Boeing aircraft manufacturing industry and the high-quality jobs it provided, the Plan Area will continue to attract and optimize new work opportunities to retain the regional skills base, expertise and competitive economies of Long Beach Airport, the City of Long Beach, and the Southern California region. The land use districts proposed within the GCSP are intended to create a flexible commercial and industrial district. In addition, the strategic implementation and administration framework will foster pedestrian, bicycle and transit mobility, improve connectivity, provide open space and amenities, and enhance the design and functionality of the workforce environment. The GCSP will become a destination where leading-edge firms come to leverage its locational advantage adjacent to Long Beach Airport, the Port of Long Beach, I-405 freeway, and a thriving residential and business community.

2.6 PROJECT OBJECTIVES

Section 15124(b) of the State CEQA Guidelines requires a project description to contain a statement of a project's objectives and Section 15124(b) requires that the statement of objectives includes the underlying purpose of the project. Section 15012.13 of NEPA requires that the environmental statement briefly specify the underlying purpose and need to which the agency is responding in proposing the proposed action. The applicant's objectives for the Proposed Project include:

- **Create a 21st Century Employment District that Fosters Innovation:** The workforce of the 21st century is seeking places that integrate jobs into active urban lifestyles. The GCSP will guide development and infrastructure investments to integrate business park, industrial, and commercial uses with supporting amenities in a flexible, commercial and industrial, multi-modal and sustainable campus-style environment. This will include breaking down the superblocks into a grid of walkable and bikeable streets and introducing sustainable and thoughtfully designed buildings, sites, open spaces and streetscapes. This goal also recognizes that while innovation has a spatial component (i.e., dynamic clusters of people working together are the source of social and technological breakthroughs), maintaining affordability through adaptive reuse of existing buildings to create small-scale, low-rent, urban environments are important to attract and retain innovators.
- **Stimulate Economic Development and Job Growth:** A principal driver of the GCSP is to stimulate economic growth and attract businesses that replenish high-quality jobs lost

from the closure of the former Boeing C-17 manufacturing plant. This will require a level of effort that extends beyond the controls of a land use plan, development standards, and implementing mechanisms found within the pages of the GCSP. Attracting key anchor tenants will rely on a coordinated effort between City staff, independent brokers, politicians, and the right mix of incentives to drive private investment to the district.

- **Cultivate the Existing Human Capital of Long Beach:** Human capital refers to the knowledge, skill sets, and motivation people have, which provide economic value. Human capital is directly related to economic growth as it can help to develop an economy through the knowledge and skills of people. Human capital realizes not everyone has the same skill sets or knowledge and that quality of work can be improved by investing in people's education. In addition to attracting quality businesses, investing in Long Beach's human capital and proactively connecting residents, and in particular former Boeing employees, with new job opportunities in the district, is an important goal of the GCSP.
- **Establish Cherry Avenue as a Multi-Modal Unifying Corridor:** Cherry Avenue is a central unifying backbone for the GCSP and provides key gateways to the district at its intersection with Carson Avenue and Spring Street. The corridor is well-located for future success based on its high visibility, regional accessibility, traffic counts, and proximity to flanking neighborhoods and businesses. The GCSP will guide the development of Cherry Avenue to become an economically thriving corridor with business and commercial infill development strategies that bring neighborhood and business-serving commercial uses, as well as employment opportunities within walking distance of existing neighborhoods. Cherry Avenue will also be improved as a street that enables active transportation, calms traffic, and creates a new identity for the district. Improving the "front door" of the GCSP by both incremental and comprehensive changes to Cherry Avenue will strengthen the economic, environmental, and visual performance of the district as a whole.
- **Increase Mobility Choices Throughout the Globemaster Corridor District:** Multiple transportation options can broaden the benefits of innovation to the City at large. For an innovation district, solid multimodal transportation means district employees have a greater choice of residence and lifestyle options. Connections between local transportation networks and regional or global transportation can also give a district a competitive edge. The GCSP will leverage its local, regional, and global transportation connections by enhancing internal connectivity and increasing mobility options within and to/from the Plan Area. Improvements will be focused on connectivity and accessibility for active transportation modes and shared mobility.

2.7 PROPOSED PROJECT

2.7.1 Globemaster Corridor Specific Plan

The Proposed Project involves the implementation of the GCSP, which serves as a planning and regulatory framework for the Plan Area. The GCSP would guide land uses for the approximately 437-acre Plan Area and allow development within this Plan Area as defined in the GCSP (Figure 2-6, Globemaster Corridor Specific Plan).

The GCSP creates a policy framework for the development and improvement of the Plan Area into an employment district in an area adjacent to the Long Beach Airport, Port of Long Beach, I-405 freeway, and surrounding residential and business community. Key components of the GCSP include:

- **Summary.** This chapter provides a brief background and overview of the GCSP, and serves as a quick reference and summary of each chapter contained in the GCSP.
- **Context.** This chapter describes the location, history, and existing conditions of the Plan Area, along with a summary of community workshop meetings.
- **Vision and Goals.** This chapter describes the vision for the overall plan, as well as the goals and policies.
- **Land Use and Mobility.** This chapter describes recommended land use and transportation improvements to the Plan Area and its vicinity. It includes a street network plan and associated cross sections, and identifies bicycle and pedestrian facilities, and nearby transit. The chapter also describes the application of six development districts and two overlay zones proposed as part of the GCSP (as shown on Figure 2-6).
    - **Business Park (BP)** district is intended as a campus-style district that supports a range of employment uses, including professional office, research and development, light industrial, high cube warehousing and aviation-related uses. Warehousing uses shall be high-turnover and employment-generating warehousing subject to the authority of the Zoning Administrator to determine what constitutes a "high-turnover and employment-generating warehouse." Development regulations are designed to achieve high-quality mid-rise structures served by a system of pedestrian pathways, passive and active open space areas, and amenities in a campus-style environment.
    - **Community Commercial (CC)** district supports medium-scale retail, hotel, and service uses intended to serve the entire community, including convenience and comparison shopping goods and associated services. Development regulations are designed to achieve a pedestrian-friendly environment where buildings face the sidewalk at the immediate intersections, and where mid-corridor streetscape enhancements provide a more inviting walking environment.

- **Industrial Commercial (IC)** district supports a mix of auto-oriented commercial and light industrial uses, including research and development, flex space, warehousing, and small-scale incubator industries, as well as community-serving commercial uses. Land uses are designed to operate entirely within enclosed structures, which pose limited potential for environmental impacts on neighboring uses with respect to noise, hazardous materials, odors, dust, light, glare, traffic, air emissions, and hours of operation. It is anticipated that buildings housing these uses will be within low-scale, adaptively reused structures or part of modern industrial complexes in campus-like settings. Development regulations are designed to address the streetscape to achieve a more inviting walking environment.
- **General Industrial (IG)** is preserved for traditionally heavy industrial and manufacturing uses such as large construction yards with heavy equipment, chemical manufacturing plants, and food processing plants. The buildings that house these operations may be older industrial buildings retrofitted to accommodate the use or new state-of-the-art manufacturing plants. The focus of the IG district is on the operating characteristics of the use, rather than the particular product created. Development regulations are designed to provide adequate parking and address the streetscape to achieve a more inviting walking environment.
- **Airport (AP)** district is reserved for property that is part of the designated airfield of the Long Beach Airport, and adjacent properties under Airport control. The Federal Aviation Administration (FAA) requires these areas to remain available for aviation operations and aviation-related uses. The property in the Airport district is managed by the Airport Department of the City of Long Beach. Land use and development standards reflect this aviation focus and are intended to accommodate any aviation-related uses approved by the Airport Department.

  This district in the GCSP is created to unify the land use regulations for the western and southern areas of the Long Beach Airport and is intended to serve as a model for the future adoption of an airport zoning district into Title 21 (Zoning Regulations), LBMC, or adoption of a specific plan for the airport, either of which will cover the entire extent of the Long Beach Airport. At the time of the creation of this Specific Plan, land use at the Long Beach Airport was regulated through a mix of the IG (General Industrial) zoning district, and several Planned Development (PD) Districts, including PDs for the Long Beach Airport Terminal (PD-12), the Atlantic Aviation Center (PD-13), and Douglas Aircraft (PD-19). This Specific Plan replaces the western area of PD-19 (leaving the eastern area, which is east of Lakewood Boulevard, as-is) and absorbs all of PD-13, as well as the IG zone on the airport property within the extent of the Plan Area.

- **Open Space (OS)** district is established to preserve the designated open space area at the southeast corner of Spring Street and California Avenue within the Plan Area. This district is intended to be used for active and passive public use, including for recreational, cultural, and community service activities that provide physical and psychological relief from the intense urban development of the Plan Area.
- **Cherry Avenue Overlay Zone (CAO)** is intended to allow complementary retail and restaurant amenities supportive of the underlying BP district and adjacent neighborhoods. Development standards are designed to ensure that new uses are pedestrian-oriented and address Cherry Avenue either as stand-alone buildings or integrated with new business-park or modern industrial complexes in a campus-style setting.
- **Airport Environs Overlay Zone (AEOZ)** encompasses the entire Specific Plan area. It is intended to ensure that future land uses within the plan area are compatible with airport operations with respect to noise, safety and airspace protection. The AEOZ includes the areas within: 1) the airport's 65 and 70 decibels (dB) Community Noise Equivalent Level (CNEL) contours; 2) the six safety compatibility zones applicable to each airport runway where heightened risk levels may warrant restrictions on land use development; and 3) the airspace protection surfaces that define the airport's airspace, including FAA Part 77 and TERPS surfaces. Each of these areas are mapped and addressed in detail in Section 2.3.2, Airport Compatibility, and again in Section 5.5, Development Regulations. The information pertaining to this Overlay Zone is informational only. Final authority and land use jurisdiction rests with the City, with the Federal Aviation Administration (FAA) serving as an advisory body with respect to land use and height. The City however intends to comply with all FAA airport land use planning guidelines in this plan, as well as Caltrans and County guidelines and regulations.

- **Land Use and Development Regulations.** This chapter provides development standards (permitted uses, building height, setbacks, open space, and parking) within each development district and overlay zone. Figure 2-7, Height Districts, establishes the height district for each parcel in the Plan Area, with a range of 30 feet to 153 feet. Table 1 establishes the maximum height and building story allowances within each height district. Each height district is determined by anticipated development type and per Federal Aviation Regulations (FAR), which are adopted by the FAA.

Table 2-1
Development Potential

Height Standard	Height District			
	A	*B*	*C*	*D*
Maximum height (feet)	153	65	38	30
Maximum stores	7	3	2	2

As shown in Table 2-1, height restrictions range from a maximum of 36 feet in areas closest to the airport, to a maximum of 176 feet towards the outer boundaries of the Plan Area. Figure 2-8, Example Development in Business Park District, illustrates the types of development that could be developed in the BP district with the provision of community benefits. Figure 2-9, Open Space Standards, establishes the open space requirements for each parcel in the Plan Area. Figure 2-10, Setback Districts, establishes the setback district for each parcel in the Plan Area:

- **Urban Design Guidelines.** This chapter describes the building design guidelines (massing, articulation, materials, openings, landscape, screening, signage, etc.) for each seven urban design areas. These include the BP District, IG District, CC District, IC District, new local street infrastructure, pedestrian corridors, and open space commons.
- **Infrastructure Systems.** This chapter discusses the proposed distribution, location, and extent of the utilities infrastructure (water, wastewater, stormwater, gas, and electric), and other essential facilities proposed to be located within the Plan Area.
- **Implementation and Administration.** This chapter discusses the general administration, review and approval process, actions for implementation of the GCSP, and a description of strategies for funding these improvements. The GCSP is the regulatory document guiding land use and development within the boundaries identified in the GCSP. Upon adoption by ordinance, the GCSP will serve as the zoning document for the properties within the Plan Area.

2.7.2 Development Potential

Table 2-2, Development Potential, provides the estimated development potential for the GCSP as well as the market demand over the 10-20 year market demand.

Table 2-2
Development Potential

GCSP Land Use	GCSP Development Potential *(square feet)*	Market Demand Plus Existing Development	
		10 years	*20 years*
Office	1,872,602	843,862	1,551,062
Medical Office	146,095	43,063	104,229

Table 2-2
Development Potential

GCSP Land Use	GCSP Development Potential *(square feet)*	Market Demand Plus Existing Development	
		10 years	*20 years*
R&D	234,651	11,398	22,797
Manufacturing	1,131,139	1,678,645	1,839,645
Light Industrial/Warehousing	4,455,892	3,088,389	4,703,389
Retail	795,457	601,205	821,032
Restaurant	107,623	133,351	241,624
Hotel	162,944	200,000	400,000
Total	**8,906,403**	**6,599,913**	**9,683,778**

As shown in Table 2-2, the anticipated development potential in the GCSP aligns closely with current market projections for most land use categories. The market projections reflect employment and development trends for the South Los Angeles (LA) County market area and the estimated market capture rate of the Plan Area in relation to other job centers in the market area. Based on the GCSP Land Use Plan, the GCSP includes development potential for approximately 8.9 million square feet of development.

Table 2-2 shows there is market demand for total development in the Plan Area for approximately 6.6 million square feet over 10 years and 9.7 million square feet over 20 years. Approximately 1.9 million square feet of development is existing occupied buildings in the Plan Area that are anticipated to remain in place.

Job creation in the GCSP area can be estimated based on the GCSP development potential. The approximately 8.9 million square feet of development would result in an estimated 11,170 new jobs. These would be new jobs in the Plan Area but may not be new jobs in Long Beach if existing businesses move to the site to expand or to obtain more suitable space in the new development. In calculating new job growth, it is necessary to remove that approximately 1.9 million square feet of existing occupied buildings from the total, as shown in Table 2-3.

Table 2-3
Build Out Excluding Remaining Existing Uses

Land Uses	Total	Sq. Ft. Per Job*	New Jobs
Office	1,770,554	429	4,127
Medical Office	127,992	429	298
R&D	234,651	532	441
Manufacturing	1,046,951	631	1,659
Light Industrial/ Warehousing	3,120,751	1,000	3,121

Table 2-3
Build Out Excluding Remaining Existing Uses

Land Uses	Total	Sq. Ft. Per Job*	New Jobs
Retail	453,077	550	824
Restaurant	89,351	160	558
Hotel	162,944	1,150	142
Total	**7,006,271**		**11,170**

Source: Svesson, 2020.

To further understand job growth, development potential has been projected out to 2040 in 5-year increments (Table 3). The projections for the first ten years are essentially consistent with the 2018 market study (Svesson 2020) (mid-point between high and low projections), accounting for minor land use changes in the GCSP. Those projections were based on detailed estimates obtained from EMSI, a source used by most workforce development agencies throughout the state. In order to obtain longer term projections which are not provided by EMSI, ADE has reviewed the Los Angeles County projections series provided by Woods & Poole Economics (W&P), a well-respected national economic forecasting firm. Over the longer term, W&P projects gradually declining growth rates for several of the key business sectors included in the GCSP. Consequently, by 2040, a little over half of the job growth potential in the GCSP remains undeveloped. For comparison, SCAG projects the City of Long Beach as a whole to add 15,900 jobs during this period (2016 RTP). Accounting for the loss of some existing jobs as discussed below, the Plan Area would account for about one third of total citywide net job growth (Svesson 2020). In order to provide a more conservative analysis of potential transportation impacts, the Traffic Impact Analysis (Appendix D) prepared for the Proposed Project assumed a larger total net square footage at buildout.

As of 2020, there are an estimated 3,700 existing jobs in the Plan Area. Ultimately, more than 1,200 of these jobs are planned to be replaced by new development and new jobs. During the 2020-2040 period, it is projected that more than 700 of these would be replaced, leaving about 3,000 existing jobs on site in 2040. Combined with the growth in Table 2-4 below, the total job count in the Plan Area in 2040 is estimated to be 7,880.

Table 2-4
Job Growth Projections, 2018-2045 and Beyond

Land Uses	Total New Jobs	Job Absorption					
		2020-2025	*2025-2030*	*2030-2035*	*2035-2040*	*2020-2040*	*Beyond 2040*
Office	4,127	512	512	437	353	1,814	2,313
Medical Office	298	69	69	59	47	243	55
R&D	441	51	51	43	35	180	261

Table 2-4
Job Growth Projections, 2018-2045 and Beyond

Land Uses	Total New Jobs	Job Absorption					
		2020-2025	*2025-2030*	*2030-2035*	*2035-2040*	*2020-2040*	*Beyond 2040*
Manufacturing	1,659	66	66	66	66	264	1,395
Light Industrial/ Warehousing	3,121	640	640	191	28	1,499	1,622
Retail	824	81	81	69	222	453	371
Restaurant	558	55	55	47	150	307	251
Hotel	142	62	62			124	18
Total	**11,170**	**1,536**	**1,536**	**912**	**901**	**4,884**	**6,286**

Source: Svesson, 2020.

2.7.3 Mobility Plan

New Streets

The GCSP involves the implementation of new streets and pedestrian connectors, which would be installed by developers incrementally as parcels are developed. Streets within the GCSP are divided into four street classifications and a pathway system: Major Avenue, Minor Avenue, Neighborhood Connector, Local Street, and Pedestrian Connection. Street classifications are consistent with the General Plan Mobility Element. The Pedestrian Connection typology represents pathways providing pedestrian/bicycle access through parcels. As previously shown, Figure 2-6 identifies conceptual locations for new streets within the Plan Area. New streets and pedestrian connections break down large blocks to enhance mobility and accessibility for all travel modes.

As shown in Figure 2-6, new Neighborhood Connector streets continue 36th Street and 32nd Street east of Cherry Avenue, forming an outer loop around the central core area with Cherry Avenue and Globemaster Way. New Local Streets extend 33rd Street east of Cherry Avenue and create new north/south mid-block connectors east and west of Cherry Avenue in both the central core and southwestern portions of the Plan Area. New pedestrian connections create internal pedestrian/bicycle pathways that further strengthen accessibility and mobility through and between parcels. Combined improvements achieve an integrated and multi-modal mobility system supportive of the land use districts.

The location of new streets and pedestrian connections are conceptual and designed to maximize the accessibility and connectivity for active transportation modes. Actual locations may deviate from those shown, provided the original intent is maintained. The actual locations will be

determined as developments are proposed and shall be approved by the Director of Public Works and the Director of Development Services.

Street Improvements

Improvements to existing streets and the design of new streets are important aspects of the GCSP. Bicycle facilities are proposed for Cherry Avenue, Wardlow Road, and all new streets in the Plan Area to help improve connectivity within the Plan Area and connect to existing bicycle infrastructure within the vicinity of the Plan Area, strengthening Long Beach's commitment to be the nation's most bicycle-friendly city.

Pedestrian improvements are also proposed for Cherry Avenue, Wardlow Road, and all new streets within the Plan Area to help ensure a continuous network of sidewalks and shaded parkways to facilitate and encourage walking through and to/from the Plan Area.

The following provides a description of the types of improvements planned for Cherry Avenue, Wardlow Road, and new streets within the Plan Area, including new pedestrian connections:

- **Cherry Avenue**: The new street section for Cherry Avenue removes on-street parking on both sides and provides a new 11' 6" Class IV separated bikeway on both sides of Cherry Avenue. A curb, pole, planter, or striping will be placed to separate cyclists from traffic between the new bikeway and the street. A landscaped parkway is also incorporated into the pedestrian right-of-way to beautify and provide shade for pedestrians and cyclists.
- **Wardlow Road**: The new street section for Wardlow Road reduces the width of the two through lanes to add a raised Class VI separated bikeway with a vertical and mountable curb. A landscaped parkway is also incorporated into the pedestrian right-of-way to beautify and provide shade for pedestrians and cyclists.
- **New Neighborhood Connector Streets**: The new street section for the Neighborhood Connector classification provides three through lanes instead of four to accommodate a parking lane and landscaped parkway on one side of the street and a Class II bike lane on the other side of the street. These improvements to the Neighborhood Connector classification for new streets will facilitate access around the central core area and improve the experience and accessibility to the central core from Cherry Avenue for both pedestrians and cyclists.
- **New Local Streets**: The new street section for the Local Street classification converts through lanes to through/Class III bike lanes (i.e., signs or sharrows) and provides a landscaped parkway on both sides of the street. Alternative parking configurations (i.e., parallel or diagonal) are also possible and provide flexibility in the design of new Local

Streets. Improvements to the Local Street classification will enhance the experience and accessibility for both cyclists and pedestrians to sites within the Plan Area.

- **New Pedestrian Connections**: The design of pedestrian connections are flexible; however, new pathways should be flanked by landscaping to beautify and provide on-site shading.

It is important to note that similar improvements could be extended to other existing streets within the GCSP as determined necessary by the City and included in the design and specifications for the ultimate roadway improvements

2.8 INTENDED USE OF THIS PEIR/PEIS

The GCSP PEIR/PEIS is primarily a source of environmental information for the City and United States Department of Defense, the lead agencies for the Proposed Project. Per Section 15170 of the State CEQA Guidelines, a lead agency (in this case, the City of Long Beach) may under CEQA work with a federal agency (in this case, the United Stated Department of Defense) to prepare a joint document, which will meet the requirements of both CEQA and NEPA.

In compliance with CEQA and NEPA, this PEIR/PEIS has been prepared to analyze the potential environmental impacts that may result from implementation of the GCSP. This PEIR/PEIS also identifies feasible mitigation measures and/or alternatives that would minimize or eliminate the potential significant impacts associated with the Proposed Project. Lead agencies are charged with the duty to substantially lessen or avoid significant environmental effects where feasible (State CEQA Guidelines Sections 15002[a][3] and 15021[a][2]). Where a lead agency identifies unavoidable adverse environmental effects of a project, State CEQA Guidelines Section 15093 authorizes the agency to balance, as applicable, the economic, legal, social, technological, or other benefits of a project against its unavoidable adverse environmental effects when determining whether to approve the project. If the specific economic, legal, social, technological, or other benefits outweigh the unavoidable adverse environmental effects, these effects may be deemed acceptable by the agency as substantiated in a statement of overriding considerations.

The GCSP would require the discretionary approval of the Long Beach Planning Commission and the Long Beach City Council. This document evaluates potential environmental impacts associated with implementation of the GCSP and provides information regarding environmental effects of the Proposed Project. The PEIR/PEIS shall also serve to inform the public, decision-makers, elected officials, and other stakeholders regarding the Proposed Project, and to solicit input on the nature and scope of potential environmental effects. The PEIR/PEIS provides the City of Long Beach decision-makers with a technically and legally adequate source of information to be used in the decision-making process in considering the GCSP.

Program EIR/EIS

For the GCSP, a programmatic-level approach has been chosen based on CEQA Guidelines, Section 15168 (14 CCR 15168), which states that a PEIR can be based on a series of actions that can be characterized as one large project and are related, as follows:

1. Geographically,
2. A logical parts in the chain of contemplated actions,
3. In connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program, or
4. As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects that can be mitigated in similar ways.

This approach is consistent with the tiering provision in California Public Resources Code Section 21083.3, CEQA Guidelines Section 15183 for "Projects Consistent with a Community Plan or Zoning" and NEPA Title 40 Part 1502 for "Environmental Impact Statements." This tiering opportunity is only available for plans (e.g., specific plan) for which an EIR or EIS has been prepared.

Using a PEIR/PEIS to assess a Specific Plan provides the advantage of looking at the whole of the action in a more thorough manner than might be possible on an individual project basis, the examination of cumulative impacts in a more comprehensive manner than on an individual basis, and the consideration of program-wide mitigation measures. It could also save time by doing one program-wide CEQA document rather than a series of multiple documents as each project arises. Subsequent activities would still have to be assessed in light of the PEIR to determine whether an additional environmental document must be prepared. If an agency finds that no new impacts would occur or no new mitigation measures would be required, the agency can approve the activity as being within the scope of the project covered by the PEIR, and no new environmental document would be required. As stated in CEQA Guidelines, Section 15168(c)(5), "a Program EIR will be most helpful in dealing with subsequent activities if it deals with the effects of the program as specifically and comprehensively as possible. With a good and detailed analysis of the program, many subsequent activities could be found to be within the scope of the project described in the Program EIR, and no further environmental documents would be required" (14 CCR 15168(c)(5)).

When the term "Proposed Project" is used in this PEIR/PEIS, it refers to all the individual building projects proposed as part of the GCSP. Therefore, the Proposed Project is the entirety of the GCSP projects envisioned over the planning horizon and does not refer to any one individual project proposed under the GCSP. In addition to a more limited review process, infill projects may qualify for streamlining. Streamlining for Infill Projects (CEQA Guidelines Section

15183.3) allows eligible projects to streamline the environmental review process by limiting the topics subject to review at the project level.

2.9 REQUIRED APPROVALS

Consistent with State CEQA Guidelines Section 15065 (b), the City of Long Beach is the lead agency for the Proposed Project. As such, this PEIR will be used by the City to both evaluate the environmental impacts created by implementation of the Proposed Project, and develop conditions of approval, which would address those impacts for which mitigation measures are proposed in the PEIR.

The GCSP would require discretionary approval from the City of Long Beach prior to construction. In order to construct the Proposed Project, the following discretionary approvals from the City are required:

- Zoning Code Amendment
- Specific Plan Approval
- Certification of the Program EIR/EIS

2.10 REFERENCES

City of Long Beach. 1989. *Long Beach General Plan Land Use Element.* Adopted 1989. http://www.lbds.info/planning/advance_planning/general_plan.asp

City of Long Beach. 2019. General Plan Land Use Element. December 2019. http://www.longbeach.gov/globalassets/lbds/media-library/documents/planning/advance/lueude/land-use-element-final-adopted-december-2019.

Svensson, D. 2020. "Revised Job Projections for Globemaster Specific Plan" Memorandum from D. Svensson (ADE) to R. Thomas and S. Wages (Dudek). April 20, 2020.

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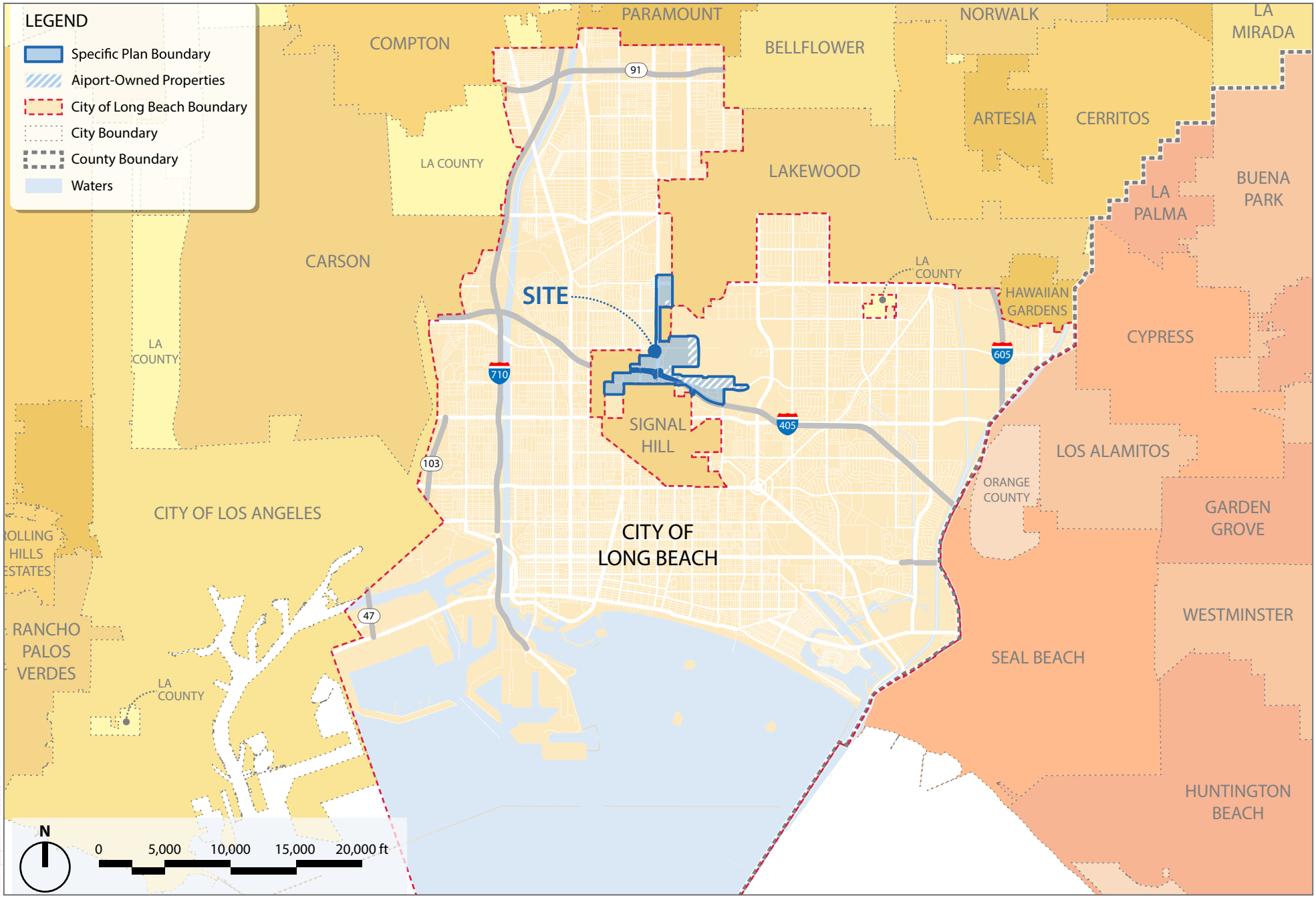

SOURCE: John Kaliski Architects 2016

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FIGURE 2-1

Regional Context

Globemaster Corridor Specific Plan Draft PEIR/PEIS

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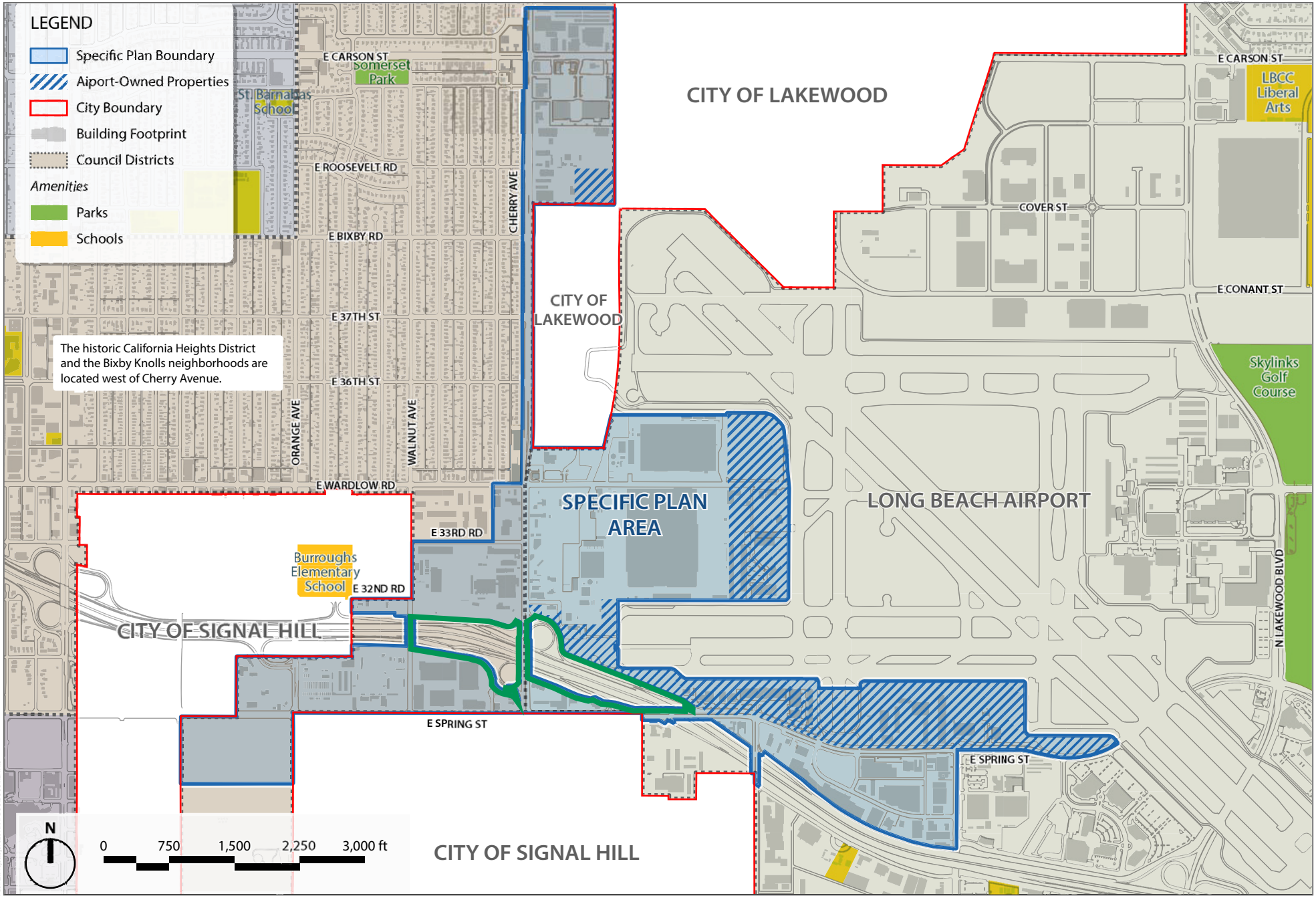

SOURCE: John Kaliski Architects 2016

FIGURE 2-2

Local Context

Globemaster Corridor Specific Plan Draft PEIR/PEIS

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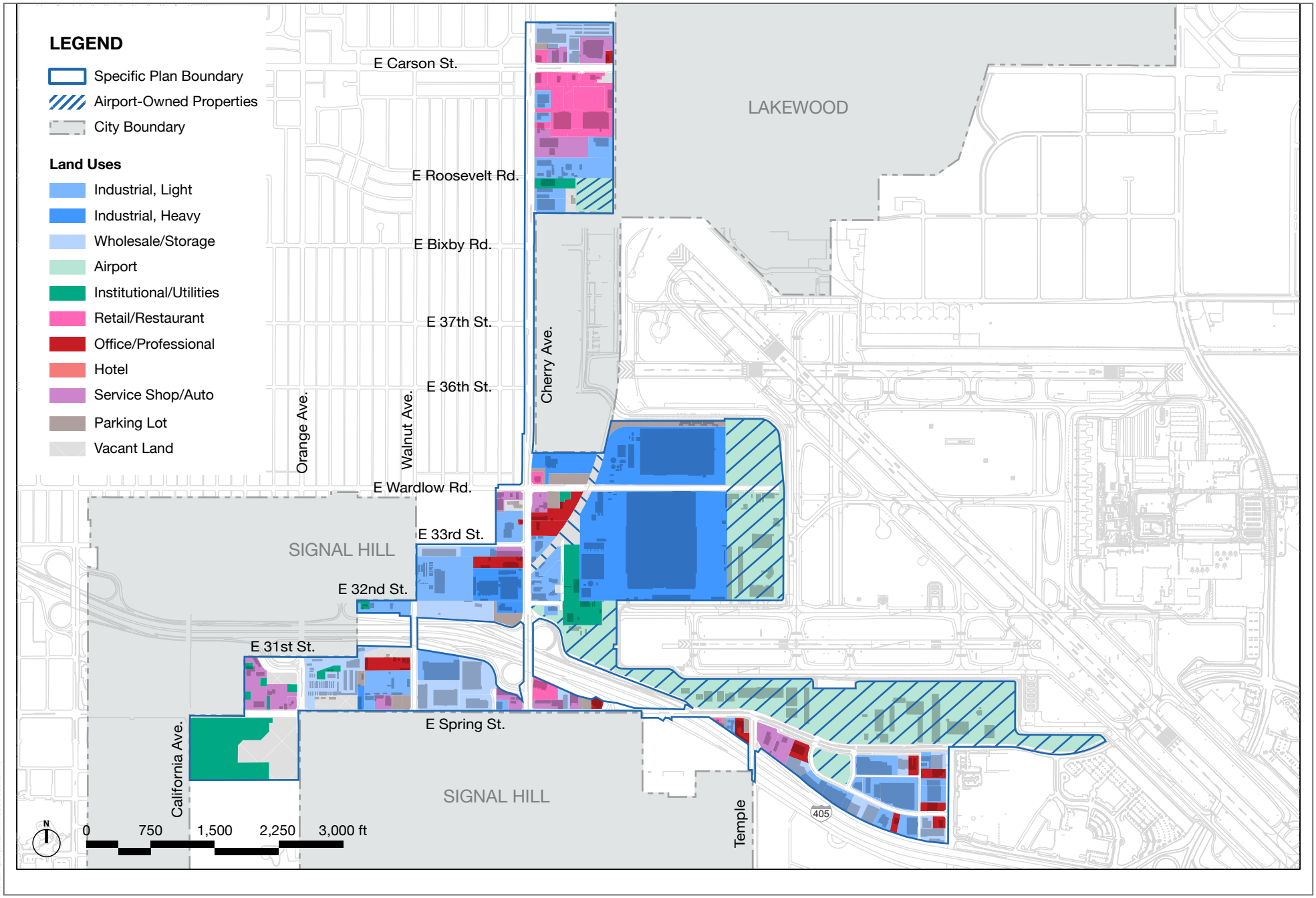

SOURCE: John Kaliski Architects 2016

FIGURE 2-3

Existing Land Uses

Globemaster Corridor Specific Plan Draft PEIR/PEIS

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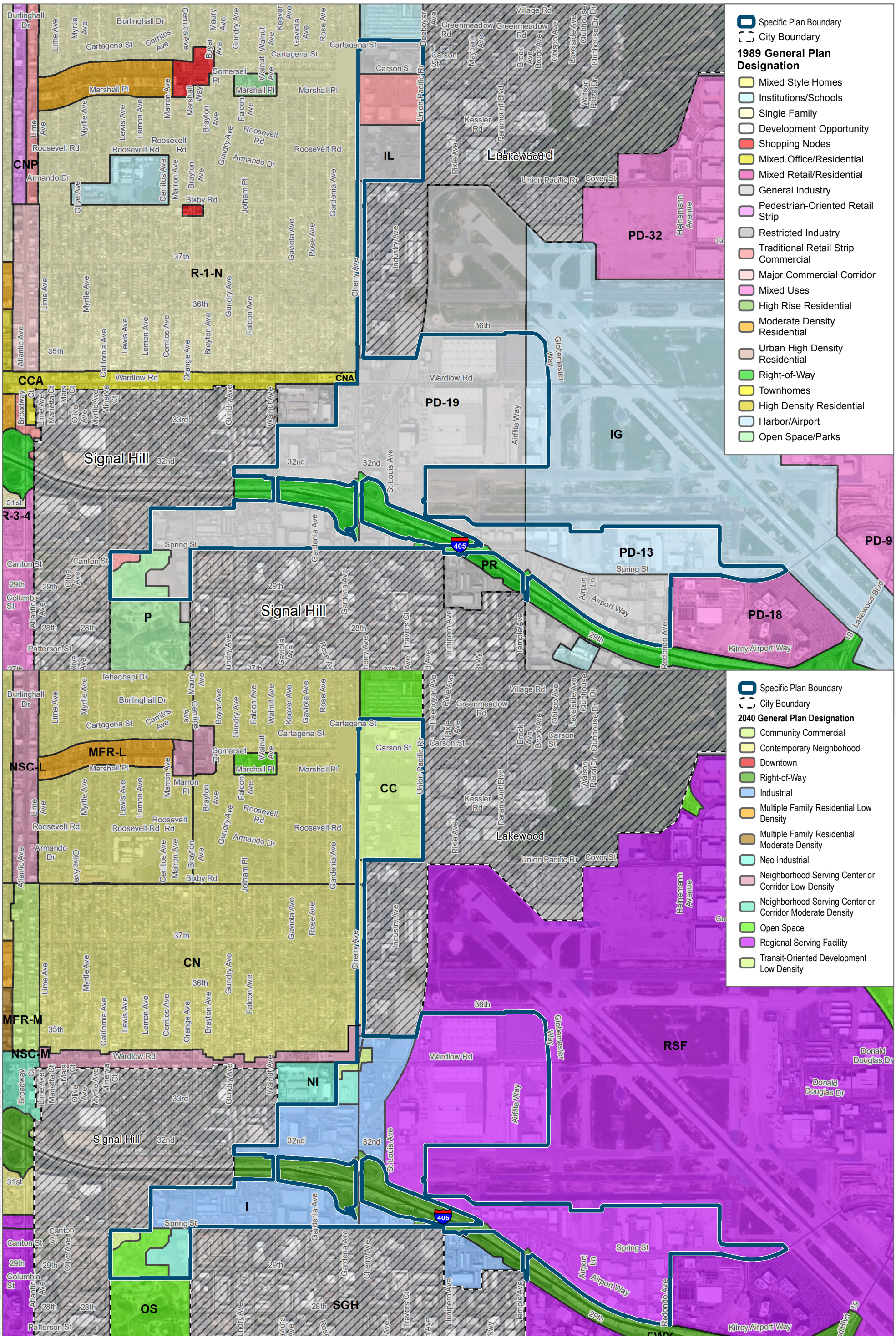

SOURCE: Bing Maps 2018; City of Long Beach, 2016

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FIGURE 2-4

General Plan Designations

Globemaster Corridor Specific Plan Initial Study

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Specific Plan Boundary

City Boundary

Areas Outside City Limits

Zoning

- CCA (Community Commercial Automobile-Oriented)
- CCN (Community R-4-N Commercial)
- CCP (Community Commercial Pedestrian-Oriented)
- CHW (Regional Highway Commercial)
- CNA (Neighborhood Commercial Automobile-Oriented)
- CNP (Neighborhood Pedestrian-Oriented Commercial)
- CNR (Neighborhood Commercial and Residential)
- CS (Commercial Storage)
- I (Institutional)
- IG (General Industrial)
- IL (Light Industrial)
- IM (Medium Industrial)
- P (Park)
- PR (Public Right-of-Way)
- R-1-N (Single-family Residential, standard lot)
- R-3-4 (Low-density Multi-family Residential)
- R-3-S (Low-density Multi-family Residential, small lot)
- R-4-N (Medium-density Multiple Residential)
- Planned Development
- PD-9 Long Beach Airport Business
- PD-12 Long Beach Airport
- PD-13 Atlantic Aviation
- PD-15 Redondo
- PD-18 Kilroy Airport
- PD-19 Douglas
- PD-20 All
- PD-23 Douglas Center
- PD-32 Douglas Park

SOURCE: Bing Maps 2018; City of Long Beach, 2016

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0 550 1,100 Feet

FIGURE 2-5

Existing Zoning

Globemaster Corridor Specific Plan Draft PEIR/PEIS

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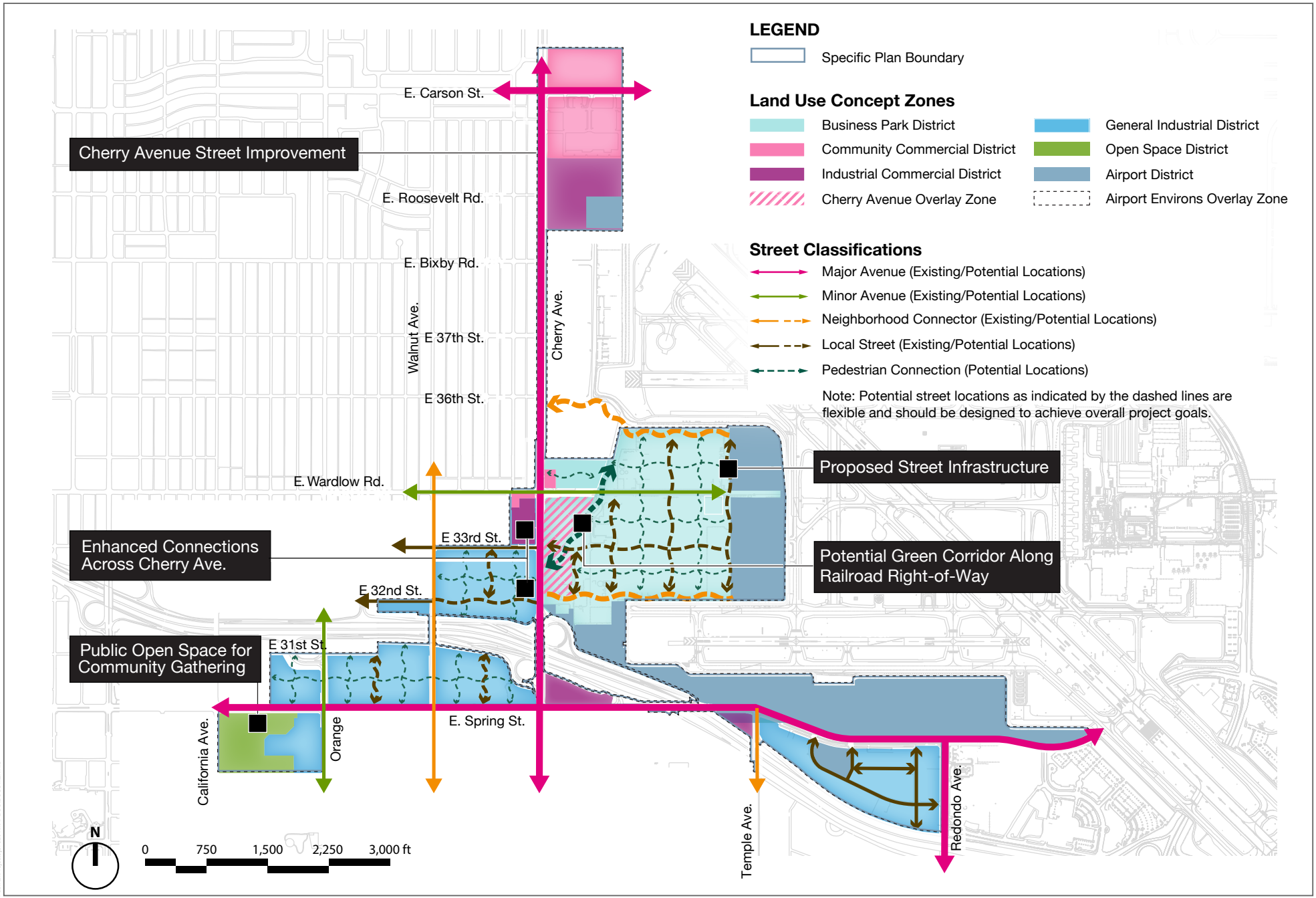

SOURCE: John Kaliski Architects 2016

FIGURE 2-6

Globemaster Corridor Specific Plan

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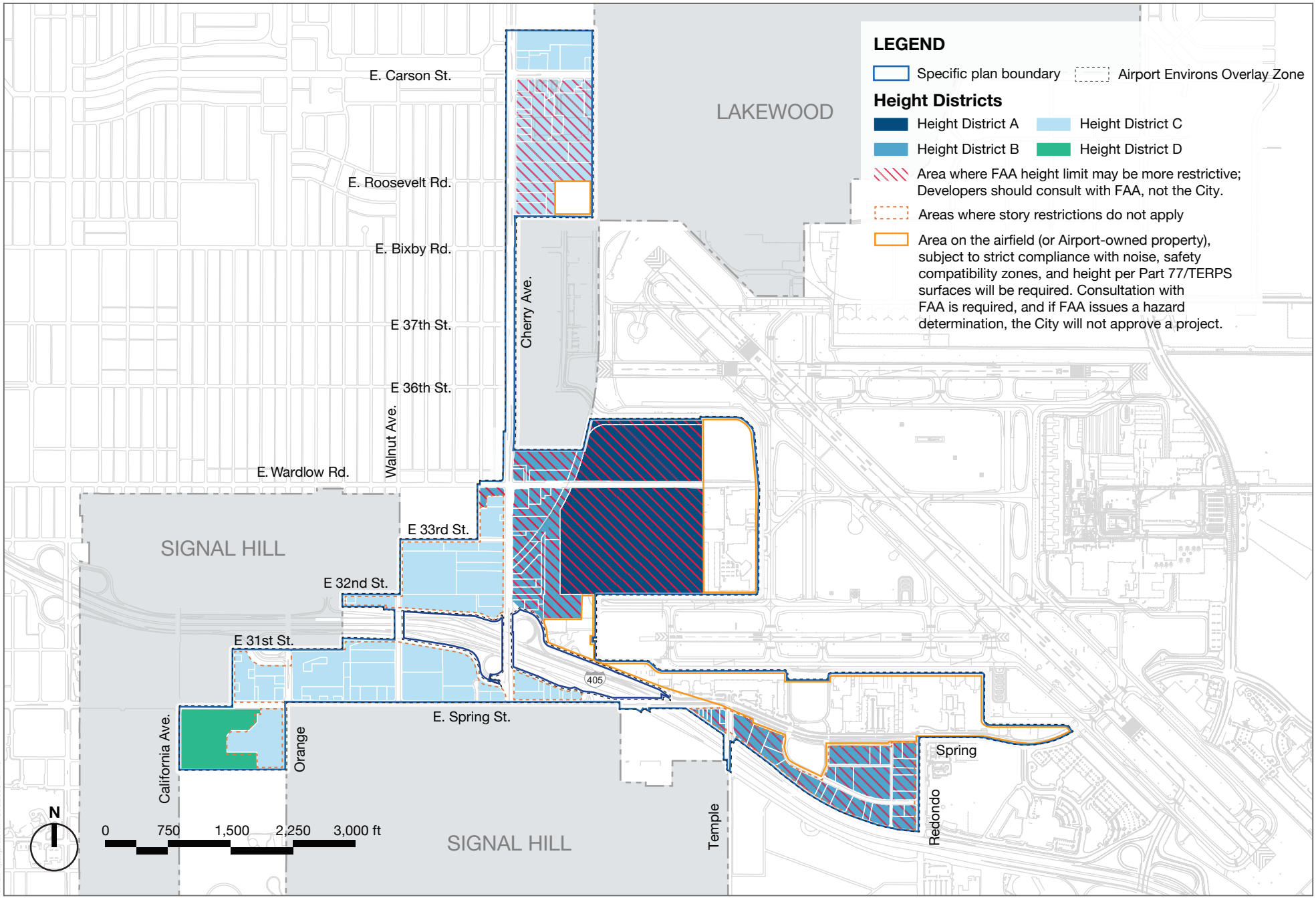

SOURCE: John Kaliski Architects 2016

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FIGURE 2-7

Height Districts

Globemaster Corridor Specific Plan Draft PEIR/PEIS

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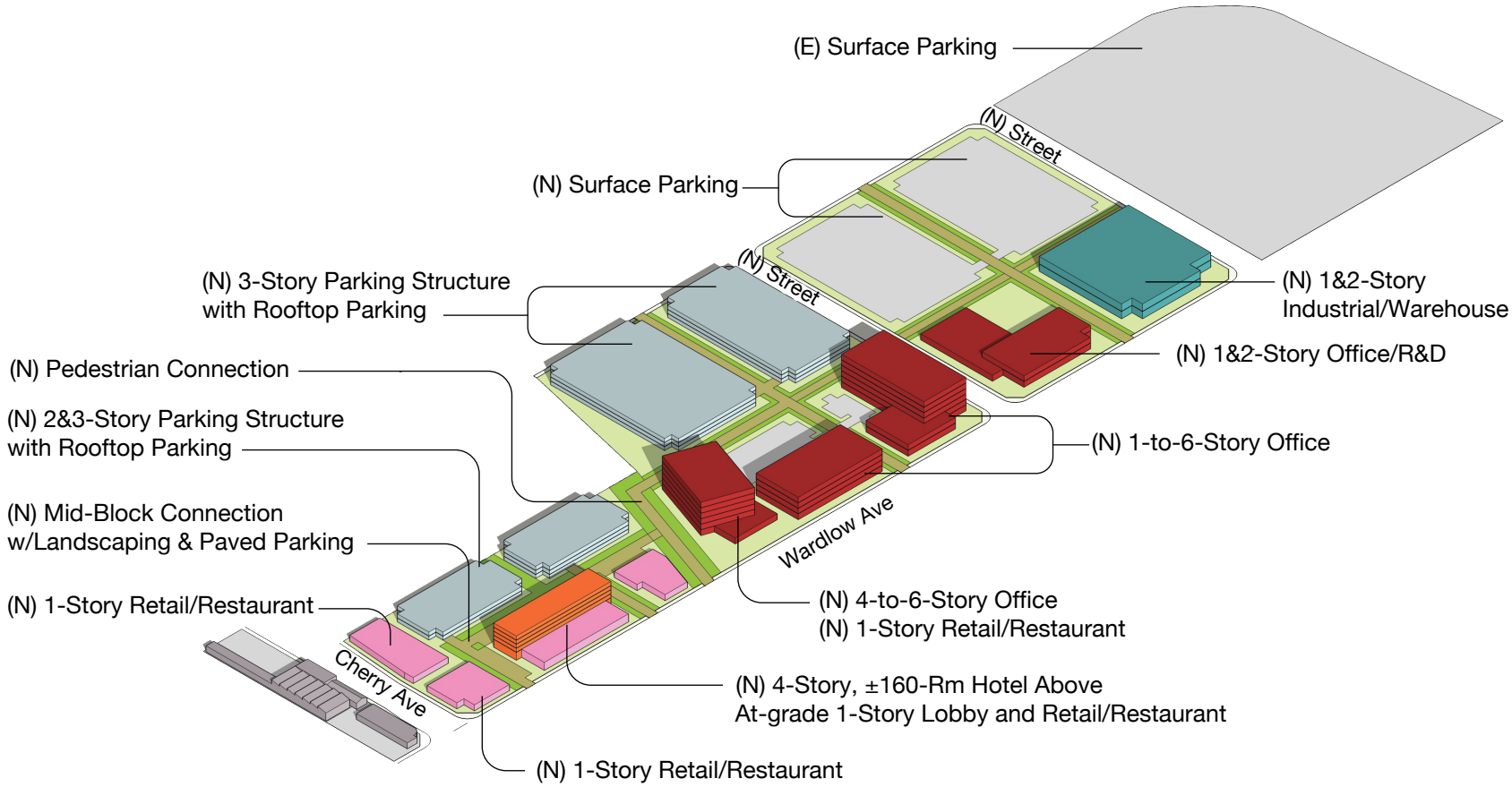

SOURCE: John Kaliski Architects 2016

FIGURE 2-8

Example Development in Business Park District

Globemaster Corridor Specific Plan Draft PEIR/PEIS

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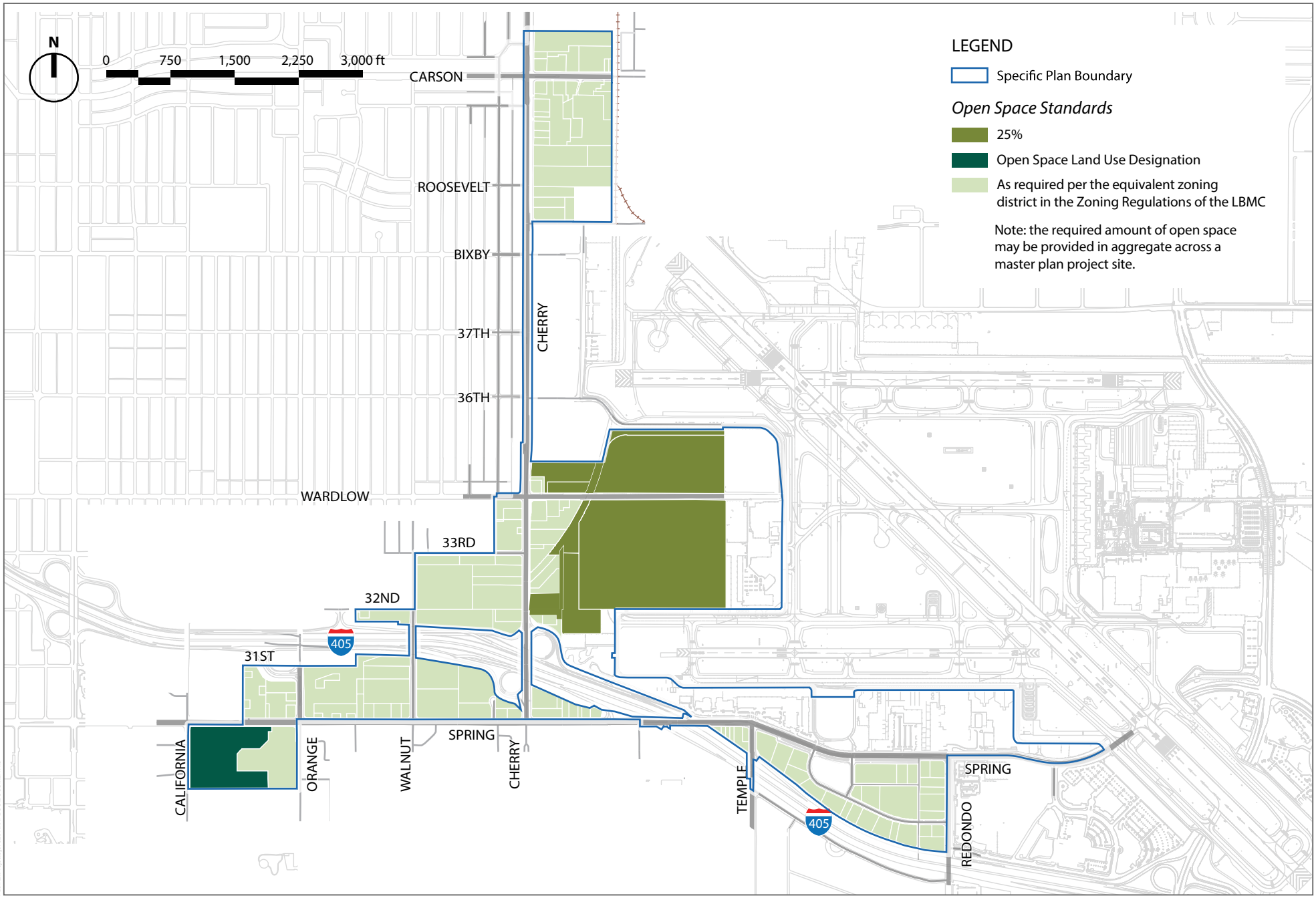

SOURCE: John Kaliski Architects 2016

FIGURE 2-9

Open Space Standards

Globemaster Corridor Specific Plan Draft PEIR/PEIS

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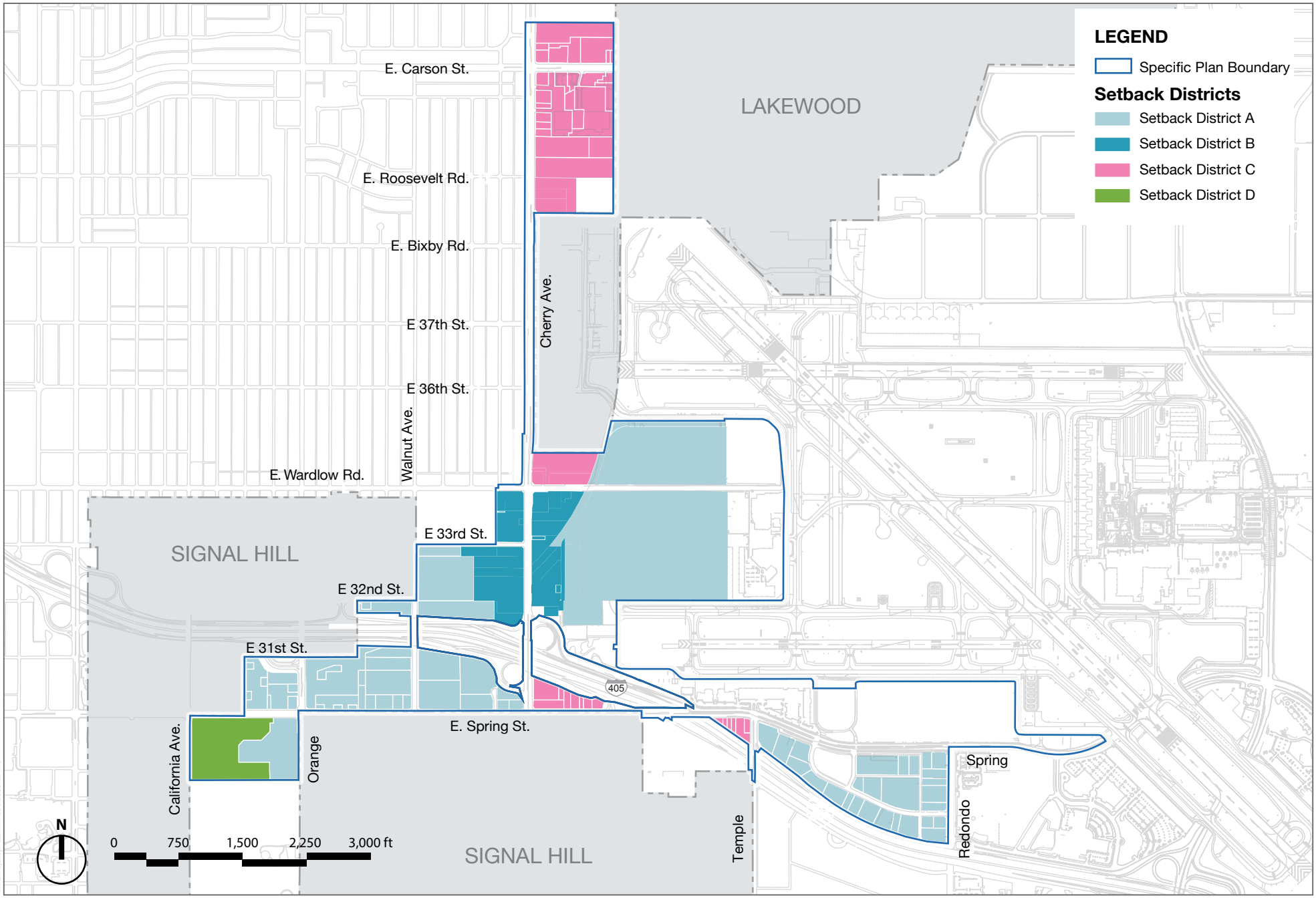

SOURCE: John Kaliski Architects 2016

FIGURE 2-10

Setback Districts

Globemaster Corridor Specific Plan Draft PEIR/PEIS

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CHAPTER 3.0
ENVIRONMENTAL ANALYSIS

The following sections contain an analysis, by issue area, of the potentially significant environmental effects of the Globemaster Corridor Specific Plan (GCSP; Proposed Project). The environmental issue areas analyzed in this section are as follows:

- Aesthetics (Section 3.1)
- Air Quality (Section 3.2)
- Cultural Resources (Section 3.3)
- Greenhouse Gas Emissions (Section 3.4)
- Hazards and Hazardous Materials (Section 3.5)
- Hydrology and Water Quality (Section 3.6)
- Land Use and Planning (Section 3.7)
- Noise (Section 3.8)
- Population and Housing (Section 3.9)
- Public Services (Section 3.10)
- Transportation (Section 3.11)
- Tribal Cultural Resources (Section 3.12)
- Utilities and Service Systems (Section 3.13)
- Environmental Justice (Section 3.14)
- Energy (Section 3.15)

The discussions of each environmental issue area include the following subsections:

- Existing Conditions
- Regulatory Setting
- Thresholds of Significance
- Impacts Analysis
- Cumulative Impacts
- Mitigation Measures
- Significance After Mitigation

The Air Quality, Greenhouse Gas Emissions, Transportation, and Energy sections of the PEIR/PEIS also includes a Methodology section.

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3.1 AESTHETICS

This section describes the existing visual setting and resources of the Globemaster Corridor Specific Plan (GCSP; Proposed Project) site and vicinity, identifies associated regulatory requirements, and analyzes the Proposed Project's impacts to aesthetics. The following discussion focuses on the existing aesthetic resources in, and the visual character of, the City of Long Beach (City) and more specifically, the Proposed Project area.

The Initial Study (IS) and Notice of Preparation (NOP) are contained in Appendix A-1, Initial Study; and Appendix A-2, Notice of Preparation, respectively. Comments regarding aesthetics, received in response to the NOP (see Appendix A-3, Notice of Preparation Comment Letters), specifically related to visual resources (landscaping and public art), visual character (update and beautification of roadway frontages/facades), and lighting (pedestrian oriented), have been considered in the preparation of the analyses presented in this section.

The IS found that the Proposed Project would have no impact as it relates to substantially damaging scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a State scenic highway due to the fact that there are no State-designed scenic highways in the City. The Pacific Coast Highway, State Route 1 (SR 1), which traverses the southern portion of the city from northwest to southeast, is currently designed as an Eligible State Scenic Highway, but is not officially designated. It is located approximately 1.3 miles south of the Plan Area (Caltrans 2011a). Due to the distance between the Plan Area and SR 1, and because of the intervening development, the Plan Area would not be located within the viewshed of this eligible highway. As such, these impacts will not be addressed further in this Draft Program Environmental Impact Report (PEIR)/Draft Program Environmental Impact Statement (PEIS).

3.1.1 Existing Conditions

Scenic Vistas

The City's 2019 General Plan Urban Design Element (2019) notes important visual resources within the City. In the vicinity of the Proposed Project, this includes distant views of the San Gabriel and Santa Ana Mountains to the northeast, as well as vistas from high points, such as near Signal Hill to the southwest. Protected view corridors in the coastal areas are identified within Downtown Shoreline Planned Development District (PD-6), which is located approximately 3 miles southwest of the Plan Area. However, there are no designated scenic viewpoints, scenic corridors, or scenic vistas available in the City that are within the Plan Area. The Scenic Routes Element that the City adopted in 1975 identified the scenic route of Ocean Boulevard and Livingston Drive within the

City.[1] The former Scenic Routes Element also identified scenic assets within the City, such as the ocean, port facilities, oil islands, Bixby Park, Bluff Park, and flood control channels. It also mentions Signal Hill as a valuable view asset and point of reference. However, the Scenic Routes Element does not identify any designated scenic vistas (City of Long Beach 1975).

Scenic Highways

Scenic highways are California highways and adjacent corridors that have been officially designed under the Department of Transportation (Caltrans) California Scenic Highway Program (see 3.1.2 *Regulatory Setting*). The program's goal is to preserve and enhance the natural beauty of California. The highways and adjacent corridors are chosen for their outstanding scenic quality, views, flora, geology, and/or other unique natural attributes (Caltrans 2008).

However, there are no officially designated scenic highways in the City, and therefore, none located in the Plan Area. However, there are several State highways within and adjacent to the City and as described in Section 3.1, Aesthetics, the Pacific Coast Highway (SR 1) is considered an eligible, if not officially designated, state scenic highway (LSA 2016).

Visual Character

Regional Visual Character. The City lies within the southwestern area of the Los Angeles Basin, which consists of a low alluvial floodplain. Regional views include the Pacific Ocean, Port of Long Beach, San Gabriel Mountains, San Bernardino Mountains, and the Santa Ana Mountains.

Visual Character of the Project Area. Although the Proposed Project area is highly urbanized, distant views of the San Gabriel Mountains are available from higher elevations. Other adjacent slopes visible from within the Plan Area include Bixby Knolls and Signal Hill. The overall Plan Area is characterized by a mix of low- to mid-rise commercial/retail, industrial, and institutional uses connected by major and minor roadways, relatively lacking in mature street trees and extensive vegetation (except along major thoroughfares) and other multi-modal amenities (bicycle/pedestrian amenities, trails, etc.). Figure 2-3, Existing Land Uses, illustrates the geographic distribution of land uses in the Plan Area and the proximity of the area to the Long Beach Airport runways.

As shown on Figure 2-3, Existing Land Uses (see Chapter 2.0, Project Description), the existing GCSP is organized into four geographic areas. The Northern Area is occupied by single-story auto-oriented commercial uses, including auto-oriented service shops, car dealerships, and strip

[1] At the time the Notice of Preparation (NOP) for this PEIR/PEIS was published and circulated for review (September 12, 2018), the 1975 General Plan Scenic Routes Element was in effect. Subsequent to the NOP, the 2019 General Plan Urban Design Element was approved by City Council on December 3, 2019 replacing the Scenic Routes Element.

commercial centers. The Long Beach Town Square shopping center is the largest shopping center in the area. This area connects to the Central Core Area via Cherry Avenue, which is home to primarily industrial uses, including the former Boeing C-17 Site, comprised of approximately 1.1 million square feet (approximately 25 acres) of enclosed aerospace manufacturing production space. South of Interstate 405 (I-405), adjacent to Signal Hill and along East Spring Street, is the Southern Area, which is primarily large scale industrial operations and warehouses west of Cherry Avenue. East of Cherry Avenue, uses transition to more commercial/office related businesses, including a new multistory office building, motorcycle dealership and a new retail center. Directly to the east, is the Southeastern Area, which is comprised of aircraft buildings, including the Pilot Shop, Long Beach Flying Club, the Daughtery Sky Harbor building, and ATP Flight School. South of Spring Street consists of warehouse and construction.

Vegetation in the Plan Area is primarily native and non-native ornamental vegetation/landscaping associated with the adjacent development. Due to the industrial, institutional, and airport-related land uses in the area, there are large tracts of land that are completely paved with concrete or asphalt.

Features that provide visual continuity in the Plan Area include the vertical line elements (i.e., overhead utility lines and streets) visible along roadways.

Key Views:

Representative Key Views of the GCSP were taken from public roadways, and have been selected to characterize the views available that may change as a result of new development envisioned by the Proposed Project. A site photo location map (Figure 3.1-1, Key View Map) illustrates the vantage point from which each key view photograph was taken and illustrates the representative view from that location.

Key View 1: View Northeast from Cover Street and Cherry Avenue

Key View 1 shows a view looking northeast from Cover Street and Cherry Avenue. This vantage point was chosen because it shows the Cherry Avenue corridor and the existing Northern Area. As illustrated in Figure 3.1-2a, Key View 1, consists of roadway, parking, and street amenities (signs, signals, and lighting), intermittent landscaping, and low-rise commercial/retail auto-related buildings in the foreground; additional commercial/retail land uses with overhead utility lines in the middleground; and in the distance more commercial/retail buildings, overhead utility lines, and the sky. Some vantage points along Cherry Avenue in this direction include distant intermittent views of the San Gabriel Mountains.

Key View 2: View South from Wardlow Road and Cherry Avenue

Key View 2 shows a view looking south down Cherry Avenue on the west side of the street, just north of the Wardlow Road crossing. This vantage point was chosen because it shows the Cherry Avenue corridor and the existing Central Core Area. As illustrated in Figure 3.1-2b, Key View 2, consists of sidewalks, mature planted trees and landscaping, roadways, medians, and street amenities (signs, signals, lighting), overhead utility lines and low-rise commercial/retail buildings in the foreground; additional low-rise commercial/retail and industrial land uses in the middleground; and in the distance, views of Signal Hill, and the sky.

Key View 3: View North from Walnut Avenue Overpass

Key View 3 shows a view looking north over the Walnut Avenue Overpass. This vantage point was chosen because it shows one of the overcrossings in the area that crosses over I-405, which is below grade, and provides a view of the existing Central Core Area. As illustrated in Figure 3.1-2c, Key View 3, consists of overhead utility lines, the Walnut Avenue overcrossing, trees and landscaping, retaining walls and the depressed I-405 freeway in the foreground; utility lines and low-rise industrial and commercial/retail, and the Cherry Avenue overcrossing in the middleground (to the east); and distant views of mid-rise industrial buildings and the sky in the background.

Key View 4: View East from Southern Area from East Spring Street and Cherry Avenue (facing east)

Key View 4 shows a view looking east from the south side of East Spring Street, at the Cherry Avenue crossing. This vantage point was chosen because it shows the East Spring Street corridor, and the existing Southern Area. As illustrated in Figure 3.1-2d, Key View 4, consists of sidewalks, mature planted trees and landscaping, roadways and street amenities (signs, signals, and lighting), and low- and mid-rise commercial/retail buildings in the foreground; additional commercial/retail buildings associated with aviation in the middleground, and in the distance views of the airport traffic control tower and the sky.

Key View 5: View South from East Spring Street and Temple Avenue

Key View 5 shows a view looking south down Temple Avenue at the Spring Street crossing. This vantage point was chosen because it shows the existing Southeast Area. As illustrated in Figure 3.1-2e, Key View 5, consists of sidewalks, planted trees and landscaping, roadways and street amenities (signs, signals, and lighting, overhead utilities, and mid-rise commercial/retail associated with aviation in the foreground; similar land uses and more dense vegetation in the middleground; and distant views of Signal Hill and the sky.

Key View 6: View East from East Spring Street and Redondo Avenue

Key View 6 shows a view looking east down East Spring Street at the Redondo Avenue crossing. This vantage point was chosen because it shows views from the Southeast Area towards the airport runways. As illustrated in Figure 3.1-2f, Key View 6, consists of sidewalks, mature planted trees and landscaping, roadways and street amenities (signs, signals, and lighting), low-rise warehouses/hangars, and low-rise industrial buildings (Water Treatment Plan/Emergency Communications and Operations Center) and associated signage in the foreground; mid-rise warehouse/hangers, industrial buildings, an air control tower (partially blocked by trees) and fencing in the middleground; and distant views of the airport runways (partially blocked by blue fencing), high-rise hotels, and sky.

Existing Light and Glare

Regional Light and Glare. Nighttime lighting that is present in the region consist of street lights and vehicle headlights on nearby roadways; building façade and interior lighting; and pole-mounted lighting in parking areas. The most significant lighting is associated with regional-serving industrial and institutional uses, including the Port of Long Beach, the Long Beach Airport, and entertainment activities at The Pike Outlets and Shoreline Village. Uses include building facades with reflective materials that contribute to glare within the City.

Proposed Project Light and Glare. Nighttime lighting in the Proposed Project area is similar to the light and glare conditions for low- and mid-rise industrial, institutional, commercial/retail, and airport-related land uses (e.g., runway, towers, and buildings) in the region, and City. (Unlike the region at large, there is no residential development in the Proposed Project area, so light is more prevalent around commercial/retail business entrances/exits, advertisements (including multi-story, lighted signage), and to illuminate parking lots and areas of work.

3.1.2 Regulatory Setting

Federal

No Federal plans, policies, regulations, or laws concerning aesthetics are applicable to the GCSP and the two development potential scenarios under consideration.

State California Department of Transportation California Scenic Highway Program

As described in Section 3.1, Aesthetics, the Plan Area is not located along a state scenic highway, thus the regulations and policies pertaining to the California Scenic Highway Program, which is administered by the Department of Transportation (Caltrans), are not applicable to the GCSP.

Local

City of Long Beach General Plan

The following goals and policies of the Long Beach General Plan, and its applicable elements, are relevant to the GCSP.

Conservation Element (1973)

The City's Conservation Element addresses the conservation and enhancement of the City's natural and scenic resources (City of Long Beach 1973). The following goals and policies from the Conservation Element are related to aesthetics:

Goal: To create and maintain a productive harmony between man and his environment through conservation of natural resources and protection of significant areas having environmental and aesthetic value.

Goal: To identify and preserve sites of outstanding scenic, historic, and cultural significance or recreational potential.

Land Use Element (1989)

The City's General Plan Land Use Element (1989) was updated in 2019. At time the Notice of Preparation (NOP) for this PEIR/PEIS was published and circulated for review (September 12, 2018), the 1989 General Plan Land Use Element was in effect. Subsequent to the NOP, the 2019 General Plan Land Use Element was approved by City Council on December 3, 2019. The 1989 Land Use Element identified principal urban design features in the City and general policy directions. Following is the specified objective from the 1989 Land Use Element that are related to aesthetics.

Objective: To improve the appearance of arterial corridors in general, recognizing that these corridors provide most travelers through our City with their initial, and perhaps lasting, impression of Long Beach.

Scenic Routes Element (1975)

The City's General Plan Scenic Routes Element (1975) was updated in 2019. At time the Notice of Preparation (NOP) for this PEIR/PEIS was published and circulated for review (September 12, 2018), the 1975 General Plan Scenic Routes Element was in effect. Subsequent to the NOP, the 2019 General Plan Urban Design Element was approved by City Council on December 3, 2019. The following 1975 Scenic Routes Element identified goals of the City that are related to aesthetics.

Goal: Preserve and enhance natural and man-made aesthetic resources within and visible from scenic corridors.

Goal: Strengthen the City's image, and thereby, the well being of all its citizens.

Goal: Link and enhance recreational, cultural, and educational opportunities through a network of scenic corridors.

Goal: Provide alternative transportation modes within the scenic corridors network.

Goal: Create a system of scenic routes through joint public and private responsibility.

It should be noted that while the goals listed above are applicable to the Proposed Project, the approved 2019 Urban Design Element replaced the existing 1975 Scenic Routes Element, thereby allowing the 2019 Urban Design Element to serve as the guiding policy document for architecture, design, and aesthetic treatments throughout the City. The City's Scenic Highways (1975) designated five types of scenic routes throughout the City and provided a description of routes that should be considered for designation as scenic routes and highways. The goals and policies pertaining to scenic routes, as identified in the 1975 Scenic Routes Element, have been incorporated into the General Plan as part of street character change in the Mobility Element (October 2013).

Land Use Element and Urban Design Element (2019)

The City's General Plan Land Use Element (2019a) and Urban Design Element (2019b), updated the 1975 Scenic Resources Element, and seek to shape the urban environment and leverage the unique relationship the City has with the natural environment. Following are the main strategies and policies from the Land Use Element that are related to aesthetics.

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

> **LU Policy 7-4:** Encourage degraded and abandoned buildings and properties to transition to more productive uses through adaptive reuse or new development.
>
> **LU Policy 7-8:** Ensure infill development is compatible with surrounding established and planned uses.

Strategy No. 9: Protect and enhance established neighborhoods.

> **LU Policy 9-1:** Protect neighborhoods from the encroachment of incompatible activities or land uses that may have negative impacts on residential living environments.
>
> **LU Policy 9-2:** Enhance and improve neighborhoods through maintenance strategies and code enforcement.

Urban Design Element (2019)

Following are the main strategies and policies from the Urban Design Element (2019) that are related to aesthetics.

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

> **Policy UD 1-4:** Focus on building flexible design on ground floors to allow for active building frontages along corridors and at the same level.
>
> **Policy UD 1-5:** Prioritize and revitalize streetscapes in existing neighborhoods and targeted areas of change to provide well-lit streets, continuous sidewalks, consistent paving treatment and improved crosswalks at intersections.
>
> **Policy UD 1-6:** Identify streets that can be reconfigured to accommodate a variety of improvements, such as wider sidewalks with trees, bike paths, dedicated transit lanes, and landscape medians or curb extensions that make the streets more attractive and usable, consistent with Complete Streets principles.
>
> **Policy UD 1-7:** Employ timeless and durable materials in streetscape designed amenities.

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

> **Policy UD 2-1**: Encourage a mix of building forms that embrace key historic resources of neighborhood, encouraging architectural preservation and allowing for innovative renovations to older structures that will contribute to neighborhood character.
>
> **Policy UD 2-2:** Remove or screen visual pollution, including amortizing blighting conditions.
>
> **Policy UD 2-3:** Promote enhancement of the built environment through façade improvements, quality and context-sensitive infill development, and landscaping.
>
> **Policy UD 2-4:** Incorporate aesthetic elements such as pedestrian lighting, gateway landscape treatment, and ornamental landscaping throughout the City.
>
> **Policy UD 2-5:** Building elements and landscaping should screen items such as above-ground wires, communication boxes, back-flow preventers, and electric transformers that create visual distractions.
>
> **Policy UD 2-6:** Prioritize aesthetic considerations in the refinement of development standards to enhance the quality of new and existing developments within scenic areas and iconic sites.

Policy UD 2-7: Identify, protect, and enhance designated scenic routes and iconic sites described in Public Spaces in this chapter.

Policy UD 2-8: Minimize visual clutter that detracts from an overall positive experience of a pedestrian. This would include regulating signage and the use of electronic signs and billboards (which may be appropriate in certain urban locations more than others).

Policy UD 2-9: Encourage the use of aesthetically designed common trash enclosures in alleys for multiple businesses to create more attractive and walkable environments.

Strategy No. 3: Support distinct and attractive neighborhoods that are dynamic, active, and engaging.

Policy UD 3-1: Preserve important neighborhood characteristics that create a sense of place, including buildings, landmarks, development patterns, design features and materials, streetscapes, signs, landscaping, public amenities, and open spaces.

Strategy No. 5: Integrate healthy living and sustainable design practices and opportunities throughout Long Beach.

Policy UD 5-4: Preserve, rehabilitate, and integrate existing buildings into new development projects wherever feasible to encourage adaptive reuse, reduce waste, and maintain local character.

Strategy No. 7: Provide safe and secure neighborhoods, streets, buildings, parks, and plazas.

Policy UD 7-1: Encourage public amenities and spaces in neighborhoods that allow for human contact, social activities, and community involvement to create an "eyes on the street" environment.

Policy UD 7-3: Incorporate Crime Prevention Through Environmental Design (CPTED) strategies to influence offender decisions prior to criminal acts such as:

- Promoting opportunities for natural surveillance to increase the perception that people can be seen by designing the placement of physical features, activities, and people in such a way as to maximize visibility and foster positive social interaction among legitimate users of private and public space.
- Encouraging the incorporation of natural access control limits to clearly differentiate between public space and private space by selectively placing entrances and exits, fencing, lighting, and landscape to limit access or control flow.

Strategy No. 8: Capitalize on urban design techniques that support economic development, prosperity, and the preservation of existing businesses throughout the community.

> **Policy UD 8-2:** Provide flexibility in building form and site design to encourage development that supports economic activity, entrepreneurship, and small businesses.

Strategy No. 9: Protect and enhance historic resources, distinguishing architecture and other features that contribute to the unique character and identity of each neighborhood.

> **Policy UD 9-2:** Protect districts that are part of the City's history and possess a unique neighborhood character.
>
> **Policy UD 9-3:** Identify, preserve, and enhance scenic areas and iconic sites. See Map UD-1, Historic Sites.

Strategy No. 10: Celebrate diverse and unique cultural influences through architectural style, public art, public spaces, markets, fairs, and streetscape furnishings.

> **Policy UD 10-1:** Embrace the cultural diversity and heritage prevalent within Long Beach through public art, signage, and preservation of historic structures.
>
> **Policy UD 10-2:** Collaborate with regional artists, residents, and community members during the design process to infuse public art and cultural amenities into a project.

Strategy No. 11: Integrate public art into the urban fabric of the City.

> **Policy UD 11-1:** Incorporate public art and cultural amenities as community landmarks, encouraging public gathering and wayfinding, large and small.
>
> **Policy UD 11-2:** Utilize public art to enhance pedestrian environments, such as sidewalks, paseos, plazas, alleys, wires, communication boxes, back-flow preventers, and electric transformers that create visual distractions.
>
> **Policy UD 11-3:** Incorporate public art either as stand- alone installations or integrated into the design of other urban improvements, such as bridges, on-ramps, public building murals, paving, benches, and street lights.
>
> **Policy UD 11-4:** Encourage the integration of localized art that add to the interest and nuance of the City's neighborhoods and showcase local identity and history.
>
> **Policy UD 11-5:** Consider opportunities to add whimsical elements to the environment by incorporating art into street furnishings.

Policy UD 11-6: Encourage expression of cultural heritage within art and public spaces.

Strategy No. 12: Expand the unified sign program, within the Areas of Change identified in the Land Use Element, to help orient visitors throughout the community. Include freeway identification, gateways, directional signs, and informational signs.

Policy UD 12-1: Focus investment on improving the appearance of entrances to the City on major boulevards so that wayfinding, landscape, and lighting are integrated into a cohesive design.

Policy UD 12-2: Develop a comprehensive approach to wayfinding for visitors and tourists who will enter the City at these gateways, including neighborhood entry signs and murals.

Policy UD 12-4: Emphasize gateways into Long Beach at freeways and important transportation hubs, such as the Long Beach Airport, Blue Line stations, and the Long Beach Cruise Terminal, and at arrival points of distinct neighborhoods and districts, through landscaping, architecture, street furniture, and appropriate signage.

Policy UD 12-5: Utilize neighborhood identity and wayfinding signage to establish an identity or theme within an existing neighborhood

Strategy No. 13: Create and maintain complete neighborhoods.

Policy UD 13-1: Incentivize neighborhood improvements to increase walkable/bikeable access to daily needs, goods/services, and healthy foods, reduce blight, and create safe places to play and congregate.

Policy UD 13-4: Implement streetscape improvements along the major cross-town corridors using a comprehensive approach to the corridor's sidewalks, landscaping, lighting, and amenities that reflect the individual neighborhoods along the corridor.

Strategy No. 14: Building types and forms should contribute to the PlaceType they are sited within and should address potential conflicts between neighboring PlaceTypes by implementing buffering measures and thoughtful development patterns.

Policy UD 14-1: Properly scale a building's form (i.e., height and massing) to the primary street it fronts on (i.e., taller buildings on larger boulevards, smaller buildings on narrower streets).

Policy UD 14-2: Acknowledge transitions between commercial and residential uses by transitioning in height, scale, and intensity in a thoughtful way to provide a buffer to lower density residential development and transition from higher to lower intensity.

Policy UD 14-3: Allow new development projects to respond to their particular context and experiment with alternative development patterns while complementing their PlaceTypes.

Policy UD 14-5: Promote commercial center and corridor development compatibility with adjacent residential uses, including ensuring that project design and function minimizes the potential adverse impacts of vehicle access, parking and loading facilities, building massing, signage, lighting, trash enclosures, and noise generating uses and areas.

Policy UD 14-6: Ensure new development respects the privacy concerns of adjoining properties and buildings. Building, window, and balcony orientation should maximize views while preserving the privacy of surrounding neighbors by considering direct sight lines to windows and/or outdoor living spaces on neighboring lots. Minimize obtrusive light by limiting outdoor lighting that is misdirected, excessive, or unnecessary.

Policy UD 14-7: Utilize building form and development strategies in conjunction with PlaceTypes and the interface between buildings and the streets (Strategy 34-35) to create a comprehensive urban fabric.

Strategy No. 15: Consider vacant parcels as infill opportunities.

Policy UD 15-2: Promote infill projects that support the designated PlaceType and be appropriate in their use, scale, compactness of development, and design character with adjacent sites and nearby existing development.

Strategy No. 17: Define boundaries between natural areas, parks, and built areas.

Policy UD 17-2: Enhance linkages and access points with lighting and signage.

Strategy No. 18: Improve and preserve the unique and fine qualities of Long Beach to strengthen the City's image and eliminate undesirable or harmful visual elements.

Policy UD 18-1: Carefully consider the development of iconic sites with visual corridors or structures of the highest visual and architectural quality.

Policy UD 18-2: Expand the existing network of scenic routes and expand to include additional routes, corridors, and sites.

Policy UD 18-3: Establish guidelines and zoning overlays, as appropriate, to regulate development within scenic areas and for iconic sites.

Policy UD 18-4: Prioritize aesthetics to enhance the quality of new and existing developments within scenic areas and iconic sites.

Policy UD 18-5: Include aesthetic design considerations for all roadway and appurtenances within scenic areas.

Policy UD 18-6: Remove or screen visual pollution, including amortizing blighting conditions.

Policy UD 18-7: Increase the visibility and awareness of visual resources through promotional materials to all segments of the population.

Policy UD 18-8: Increase governmental commitment to the designation of scenic routes and the protection of scenic resources, and create and maintain a system of scenic routes through joint public and private responsibility.

Policy UD 18-9: Link and enhance significant recreational, cultural, and educational opportunities through a network of scenic corridors.

Policy UD 18-10: Follow the principles of the former scenic highways element, now incorporated into the General Plan as part of street character change (Mobility Element, Page 89, Map 16), and as part of the Street Design Manual, implementation measure MOP IM-1, Page 122.

Strategy No. 19: Protect and enhance established Founding and Contemporary Neighborhood PlaceType.

Policy UD 19-2: Ensure that project site design and function minimizes the potential adverse impacts of vehicle access, parking and loading facilities, signage, lighting, trash enclosures, and sound systems.

Policy UD 19-3: Support new development that is designed to respect the height, massing, and open space characteristics of the existing neighborhood while creating the appearance of single-family units for multifamily buildings to allow for better integration.

Policy UD 19-4: Promote the uniqueness of each neighborhood through preservation of mature trees, historic structures, fine-grained architectural detail, appropriate building scale, and cultural amenities that are key to the neighborhood's identity and help create a uniform streetscape.

Policy UD 19-5: Provide shade trees to match the existing species to reinforce neighborhood identity, to add greenscape for texture, shade and overall visual character, and to create a uniform streetscape. Maintain consistent wall and fence treatment along the street edge.

Strategy No. 23: Protect and enhance established Community Commercial PlaceType.

Policy UD 23-1: Provide adequate setbacks, along with visual and noise buffers, to separate automobile- oriented developments from adjacent residential neighborhoods.

Policy UD 23-2: Develop single-family attached units or multifamily residential uses as a transition in scale between the automobile-oriented corridor and the adjacent neighborhood.

Policy UD 23-3: Encourage new developments to provide alley and streetscape improvements that enhance the experience of the pedestrian and transit rider, such as low walls screening parking lots, substantial landscaping, street trees, and pedestrian- scaled lighting.

Policy UD 23-4: Provide clear and controlled signage that is not allowed to proliferate along the corridor or within a center in order to minimize visual clutter.

Policy UD 23-6: Provide low walls or hedges to buffer pedestrians from surface parking lots and provide well-marked pedestrian paths from sidewalks and parking lots to commercial entrances.

Strategy No. 24: Protect and enhance established Industrial PlaceType.

Policy UD 24-1: Promote flexible interior spaces, integrated technological resources, innovative architectural styles, and enhanced entrances and frontages to attract creative office and neo-industrial uses.

Policy UD 24-3: Promote the incorporation of buffers between residential and industrial uses, such as surface parking, landscaped open space buffers, and lower buildings.

Policy UD 24-6: Provide heavily landscaped edges and screening along industrial corridors to make them more attractive to pedestrians, bicyclists, and transit users.

Policy UD 24-7: Establish parkways, planted medians, and street trees along the sidewalk to increase permeable surface areas.

Strategy No. 25: Protect and enhance established Neo-Industrial PlaceType.

Policy UD 25-1: Enhance the edges, both within and adjacent to, the regional serving facility to avoid abrupt transitions between large institutional facilities and their neighbors.

Policy UD 25-2: Establish visual screens, whenever possible, between live-work units and existing heavy or unenclosed industrial operations.

Policy UD 25-3: Encourage buildings that step down to match permitted residential building heights where new development is adjacent to residential uses.

Policy UD 25-4: Encourage development intensity that is graduated, from lower intensity near residential neighbors, to moderate intensity near wholly industrial uses.

Policy UD 25-5: Encourage Neo-Industrial PlaceTypes to have improved walkability with on-site, sidewalk and streetscape landscaping, signage, and other enhancements.

Policy UD 25-6: As a critical component of this PlaceType, establish alleys and pathways between streets and blocks that will be maintained and enhanced.

Policy UD 25-8: Integrate sustainable design strategies into all development or redevelopment, including new exterior materials or design features.

Strategy No. 26: Protect and enhance established Regional-Serving Facility PlaceType.

Policy UD 25-1: Enhance the edges, both within and adjacent to, the regional serving facility to avoid abrupt transitions between large institutional facilities and their neighbors.

Policy UD 26-2: Encourage separation of incompatible land uses with site planning strategies and appropriate design treatments.

Policy UD 26-3: Incorporate shade trees and pedestrian amenities along main streets, with pedestrian entrances oriented toward the sidewalk, not just internalized to the campus or facility.

Policy UD 26-4: Incorporate design features that provide for thematic elements to link adjacent areas with regional serving facilities, reinforcing community connections to these places.

Strategy No. 31: Provide a variety of public spaces throughout the City

Policy UD 31-3: Encourage plazas and public spaces in locations that take advantage of views and viewsheds.

Policy UD 31-4: Promote the integration of adequate seating, bike racks, water features, public art, and other pedestrian amenities within plazas and public spaces.

Strategy No. 35: Building design and form shall define street walls that contribute to great streets and vibrant pedestrian environments.

Policy UD 35-2: Buildings should be constructed of high quality and durable materials, especially at the ground floor, which is experienced most by pedestrians.

Policy UD 35-2: Buildings should be constructed of high quality and durable materials, especially at the ground floor, which is experienced most by pedestrians.

Policy UD 35-4: Emphasize pedestrian orientation in site and building design to define the public realm and activate sidewalks and pedestrian paths.

Policy UD 35-6: Maintain a minimum street wall height to ensure the "public room of the street" (as shaped by buildings on both sides) is consistent. This is intended to eliminate parcels being underdeveloped along the edges, thus not contributing to the creation of good streets.

Policy UD 35-7: Monolithic structures that appear as a massive wall, block views, or overshadow the surrounding neighborhood, should be avoided.

Policy UD 35-8: Where parking structures are planned, the street wall should be composed of active uses that screen podium parking, parking structures, and other uses that do not contribute to a vibrant pedestrian environment.

Strategy No. 36: Develop a specific role and identity for a street, so that it contributes to the neighborhood's character while supporting specific, functional requirements.

Policy UD 36-1: Improve the frontage zone of buildings as extensions of the building, by enhancing entryways and doors, incorporating sidewalk cafes, and enhancing the space adjacent to the building as part of the pedestrian experience.

Policy UD 36-2: Develop streetscape strategies and concepts that establish a street as a public room, and incorporate opportunities for dining and display, walking, landscaping, and street furniture.

Policy UD 36-4: Identify zones along both sides of the street that define the building edge, dining and display areas, walking zone, planting and street furniture zones, and parking zones to enhance the character of the "public room."

Strategy No. 37: Frontages shall have well-designed street walls, contributing to making an inviting transition between public and private space.

Policy UD 37-1: Unify streets within each district with consistent frontage character types.

Policy UD 37-2: Provide outdoor dining areas at restaurants with enclosed patios, decorative fencing, planters, and potted plants

Policy UD 37-3: Identify areas for frontage improvements along pedestrian priority areas, described in the Mobility Element on Page 80, Map 13.

Policy UD 37-4: Promote façade improvement strategies and implementation measures for existing commercial, office, and residential buildings, and incorporate the following improvements:

- Entrances that include recessed doors, archways or cased openings, a change in wall plane, and/or projecting elements above the entrance.
- Accessible pathways from parking or the street to building entries.
- Low-level lighting on pathways and building faces.
- Clear glass windows on the ground floor for interior shop views, awnings, or other window coverings that contribute to defining the character of the building.
- 360-degree architectural articulation.

Strategy No. 38: Enhance the functionality within each PlaceType by improving the character and functionality of each Street Type.

Policy UD 38-4: Buffer and screen parking areas with landscaping, berms, or low screens.

Policy UD 38-5: Provide special paving treatment or striping at crosswalks and intersections.

Policy UD 38-7: Create a clear frontage zone along the sidewalk with clear visibility of the structure and façade, as well as the space adjacent to the building.

Policy UD 38-9: Provide a street furniture and landscape zone adjacent to the curb for parkways, tree grates, bicycle parking, lighting, benches, newspaper kiosks, utility poles, potted plants, benches, transit shelters, and other pedestrian amenities.

Strategy No. 39: Beautify the City with trees and landscaping while being conscious of water resources and using sustainable practices.

Policy UD 39-1: Accommodate large canopy street trees that contribute to the City's urban forest, enhance street character and neighborhood identity, and provide shade for pedestrians and parked cars and bikes.

Strategy No. 40: Design parking lots, structures, driveways, and access points to promote walkability, reduced trips, and promote sustainability.

Policy UD 40-1: Minimize the visual impact of parking structures by encouraging the first floor to be wrapped with pedestrian-friendly uses and by urban design and landscaping features along pedestrian-oriented street frontages.

Policy UD 40-3: Beautify and screen parking lots located adjacent to a street edge with landscaping, shade trees, and decorative paving treatments.

Policy UD 40-4: Use planter beds, decorative paving materials, and safe pedestrian paths to break up large areas dedicated to parking.

Policy UD 40-6: Enhance driveway access points with ornamental landscaping, accent paving, and lighting.

Strategy No. 41: Connect neighborhoods, corridors, and centers by maintaining and providing for walkable blocks.

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

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

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

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

Long Beach Municipal Code

Title 21 (Zoning Regulations) of the Long Beach Municipal Code (LBMC) includes property development standards and design guidelines for projects within the City. The LBMC includes regulations related to allowable land uses, setback and height requirements, landscaping, walls, fencing, signage, access, parking, storage areas, and trash enclosures. The LBMC also includes performance standards to demonstrate project's consistency with the aforementioned regulations.

Zoning Regulations

The City's Zoning Regulations includes guidelines and regulations related to lighting standards and landscape design. Lighting proposed as part of a parking lot and/or garage are required to the lighting standards as defined in the Zoning Regulations, directed and shielded to prevent light and glare from intruding onto adjacent sites and in accordance with the applicable standards of the Illuminating Engineers Society. Refer to the Zoning Regulations, Section 21.41.259, Parking area-Lighting. For all projects requiring site plan review, landscaping standards as described in Zoning Regulations, Chapter 21.42 Landscaping Standards, would be applicable. Projects would be

required to comply with the guidelines governing the portion of landscaping that should be drought tolerant and native plant materials, subject to City review and approval.

3.1.3 Thresholds of Significance

The following significance criteria are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.), and will be used to determine the significance of potential aesthetic impacts. Impacts to aesthetics would be significant if the Proposed Project would:

A. Have a substantial adverse effect on a scenic vista.

B. Substantially degrade the existing visual character or quality of the site and its surroundings.

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

As previously described, the IS (Appendix A-1, Initial Study) found that because the City does not have any officially designated state scenic highways, the Proposed Project could not substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. Therefore, the potential for damaging scenic resources within a state scenic highway are not further discussed in this Draft PEIR/PEIS.

3.1.4 Impacts Analysis

a) Would the project have a substantial adverse effect on a scenic vista?

The 2019 General Plan Urban Design Element notes important visual resources including distant views of the San Gabriel and Santa Ana Mountains as well as vistas from high points, such as near Signal Hill. The element also discusses scenic routes and iconic sites.

As previously described, there are no City-designed scenic viewpoints, scenic corridors, or scenic vistas available in the City, and therefore, there are none within the Plan Area. The visual setting of the Plan Area is characterized by low-to mid-rise scale buildings and structures, with some mid-rise/warehouse industrial uses and commercial/retail uses associated with airport uses. Project approval would facilitate the future development of the Plan Area, consistent with the goals of the City's 2019 Urban Design Element, which includes enhancement of corridors and gateways as well as the overall urban design relationship between private development and public right-of-way.

The GCSP itself would not result in the physical development of any building or structures that would result in the permanent obstruction of the scenic vistas identified; however, GCSP approval would facilitate future development that could result in the obstruction of

important visual resources, such as Signal Hill (see Key Viewpoint 2, and 5 [Figures 3.1-2b and 3.1-2e, respectively) and visual landmarks like the air traffic control tower at Long Beach Airport (see Key Viewpoint 4 [Figure 3.1-2d]). It is anticipated that views of these resources would not be significantly altered by development envisioned under the GCSP as the height of development is subject to compatibility with the airport land use and applicable restrictions of the 2011 Caltrans California Airport Land Use Planning Handbook (2011 Handbook) and Federal Aviation Administration (FAA) Federal Aviation Regulations. Planned heights are greatest in areas of general industrial land uses (IG) (up to a maximum of 153 feet tall). However, the areas to the east of Cherry Avenue may be more restrictive due to the FAA height limits (see Figure 2-8, Federal Aviation Regulations – Allowable Height, in Chapter 2.0, Project Description). There are no designated scenic vistas in the Plan Area and future development associated with the GCSP would result the redevelopment of existing urbanized areas consistent with the heights identified in the 2019 General Plan Land Use Element. In addition, the policies identified in the 2019 General Plan Urban Design Element, address context-sensitive design between land uses and the public realm, which includes the scale of buildings.

CEQA Impact Determination

Any development would be designed in accordance with the standards described in the GCSP, and would be consistent with the development strategies, policies, and standards of the City's 2019 Urban Design Element. Therefore, while future development facilitated by GCSP approval would modify views to and from areas within the Plan Area, potential impacts under CEQA are considered **less than significant**, and as such, no mitigation is required.

NEPA Impact Determination

Any development would be designed in accordance with the standards described in the GCSP, and would be consistent with the development strategies, policies, and standards of the City's 2019 Urban Design Element. Therefore, while future development facilitated by GCSP approval would modify views to and from areas within the Plan Area, potential effects are considered less than significant, and as such, no mitigation is required. As such, there would be **no adverse impacts** under NEPA.

b) Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Construction

Potential visual impacts that could degrade the existing visual character or quality of the Plan Area and its surroundings during construction would be related to construction

activities associated with the development and improvement of individual projects in the Plan Area, such as staging, temporary lighting, demolition, and active construction sites that may include fencing that screen views of building facades and street frontages. These impacts are anticipated to be short-term, temporary impacts and views would be substantially returned to existing conditions or improved after project completion. Furthermore, individual projects would be required to adhere to City standards regarding construction fencing and timing during construction activities and are subject to review by the City Planning Commission (or other designated authority). As such, construction-period impacts related to the GCSP substantially degrading the existing visual character or quality of the Plan Area and its surroundings are considered **less than significant**. No mitigation is required during construction.

Operation

As previously described, there are no City-designed scenic viewpoints, scenic corridors, or scenic vistas in the City or Plan Area, nor are there any designed scenic resources for which the City requires view protection. However, approval of the GCSP would allow for future development that could permanently alter the existing visual character and may result in the potential isolated obstruction of important scenic visual resources described above. Views of natural landforms are not anticipated to be completely obstructed from sensitive viewers by the individual developments envisioned under the GCSP.

As shown in Figure 2-6, Globemaster Corridor Specific Plan (see Chapter 2.0, Project Description), the GCSP envisions six development districts and two overlay zones, with increased building density in the centrally located Business Park district. In addition, the Proposed Project would include new areas of open space in the Open Space district in the southwest, and would preserve visual corridors along major and minor streetscapes such as Cherry Avenue, East Spring Street, Wardlow Road and Orange Avenue, therefore preserving and increasing opportunities to view distant scenic features. Refer to Chapter 2.0, Project Description, of this Draft PEIR/PEIS, for a comprehensive discussion of the development districts and overlay zones.

Consistent with FAA height standards, the maximum building height in the Plan Area would be 7 stories, 153 feet, which is reserved for the area near the airport east of Cherry Avenue. This building height is reserved for the Business Park (BP) district and would be buffered from Cherry Avenue by an area of the GCSP that is limited to 3 stories in height, consistent with the heights approved in 2019 General Plan Land Use Element PlaceType. However, the area to the east of Cherry Avenue may be more restrictive due to the FAA height limits. Additionally, the heights must also comply with 2011 Handbook and existing General Plan height limits. All building heights shall conform to the Long Beach Airport

– Runway Approach Zones – Standard for determining obstruction in air navigation, as per Federal Aviation Regulations, which are adopted by the FAA.

The existing Globemaster C-17 hangar is located in the portion of the GCSP subject to the 153-foot height limit. For reference, the existing Globemaster C-17 hangar is approximately 100 feet in height. The development of new structures on the east side of Cherry Avenue at the maximum allowed heights would be comparable to the existing context within this specified portion of the GCSP. In addition, the incorporation of buffers with lower building heights along Cherry Avenue would allow for a transition area that is comparable to existing conditions along the Cherry Avenue Corridor. Outside of the Business Park (BP) district, maximum building heights are similar to the existing heights allowed in the industrial and commercial zoning districts. None of the Plan Areas abutting residential would have a maximum building height over 40 feet, which is consistent with the 2019 General Plan Land Use Element and less than the maximum heights permitted under existing zoning standards for those areas. Furthermore, the redevelopment of the GCSP would be required to be consistent with the context-sensitive design policies described in the 2019 General Plan Urban Design Element.

The GCSP includes provisions for the introduction of new visual elements in the plan area that includes improving streetscape frontages and building facades and accommodating visual enhancements (such as landscaping and public art) would be beneficial contributions to the visual character and quality of the Plan Area.

As such, operation-period impacts related to the GCSP substantially degrading the existing visual character or quality of the site and its surroundings are considered **less than significant**. No mitigation is required during future operation.

CEQA Impact Determination

Impacts substantially degrading the existing visual character or quality of the Plan Area and its surroundings related to future development under the GCSP are considered **less than significant** and no mitigation is required, during both construction and operation.

NEPA Impact Determination

Effects substantially degrading the existing visual character or quality of the Plan Area and its surroundings related to future development under the GCSP are considered less than significant and no mitigation is required, during both construction and operation. As such, there would be **no adverse effects** under NEPA.

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

As stated previously, existing sources of light and glare in the project vicinity include headlights on roadways, building façade and interior lighting, pole-mounted lighting in parking areas, and lighting associated with the Long Beach Airport. Lighting from existing distant development within the region and surrounding cities also contribute to the background lighting in the Plan Area.

While the GCSP itself would not result in direct sources of light or glare, future development facilitated by the GCSP would introduce new sources of lighting that are typical of commercial/retail, industrial, and institutional projects, that could affect airport land uses. Lighting would vary by development type and would be required to adhere to the standards included in the GCSP (and thus, be consistent with the standards, regulations, goals, and policies of the Conservation, Land Use, and Urban Design Elements of the General Plan, and the Zoning Regulations). Additionally, all lighting will be required to comply with the 2011 Handbook and FAA/Federal Aviation Regulations restrictions, within applicable airport-adjacent areas where these regulations or guidelines apply (Caltrans 2011b). Specifically, Federal Aviation Regulations Section 25.581, Lighting Protection, requires that an airplane must be protected against catastrophic effects of lighting (Title 14 C.F.R.). As such, to ensure that future individual projects do not adversely affect day or nighttime views in the Plan Area, including adjacent airport land uses, measures to submit lighting plans and specifications for review by the City's Planning Commission (or other designated authority), and adherence to GCSP development and design standards (e.g., using full cut-off fixtures[2]), would be required as per mitigation measures **MM-AES-1** and **MM-AES-2**. **MM-AES-1** would require the preparation and submittal of documentation prepared by licensed professional to ensure that all light sources be designed with lights directed and shielded to prevent light and glare from intruding onto adjacent sites in accordance with the Long Beach Municipal Code. Additionally, mitigation measure **MM-AES-2** would reduce potential impacts related to nighttime lighting by requiring all nighttime lighting installed on private property within the Globemaster Corridor Specific Plan area to be shielded, directed away from residential and other light-sensitive uses, and confined to the Plan Area. Further, the City's review of site plans and architectural renderings for subsequent projects, with an emphasis on the presence of reflective materials and proposed lighting, would minimize and mitigate potential impacts related to light and glare. With the implementation of mitigation measures **MM-AES-1** and **MM-AES-2**, the potential impacts associated with light and glare from future development facilitated by the Proposed Project would be less than significant.

[2] All outdoor lighting devices provided on public and private property within the Plan Area shall use full cut-off fixtures with certifications under the backlight/uplight/glare (BUG) rating system.

CEQA Impact Determination

Implementation of mitigation measures **MM-AES-1** and **MM-AES-2** would ensure that potential light and glare impacts from future projects are reduced to a **less-than-significant** level. As such, impacts are considered **less than significant with mitigation incorporated** under CEQA.

NEPA Impact Determination

Implementation of mitigation measures **MM-AES-1** and **MM-AES-2** would ensure that potential light and glare effects from future projects are reduced to a less-than-significant level. As such, there would be **no adverse effects** from light and glare under NEPA.

3.1.5 Cumulative Impacts

Scenic Vistas, Visual Character and Quality, and Light and Glare

The Proposed Project would implement the GCSP, guiding land uses for the 437-acre Plan Area, creating a new employment district, and developing six districts and two overlay zones. Because the action would facilitate future development, the Proposed Project itself is cumulative in nature. Cumulative impacts would occur if the Proposed Project in combination with other past, present, or reasonably foreseeable projects resulted in degraded scenic vistas, degraded visual character and quality, and substantial increases in light and glare that adversely affect day and nighttime views. The Plan Area is already urbanized and the potential for viewing scenic vistas, such as the San Gabriel Mountains or Santa Ana Mountains, is already limited. Furthermore, the land use changes anticipated to occur as a result of the GCSP are not considered to be visually adverse (i.e., degrading visual character and quality). All future proposed projects would be subject to the GCSP applicable land use and development regulations (development standards related to building height community benefits, setbacks, open space, parking, and adaptive reuse) and design guidelines (design standards related to massing, articulation, materials, openings, landscape, screening, signage, etc.), as well as applicable City development and design standards set forth in the Conservation, Land Use, and Urban Design Elements, and Zoning Regulations, to ensure consistency and compatibility with the surrounding areas. Additionally, all lighting will be required to comply with the Caltrans Airport Land Use Planning Handbook and FAA/Federal Aviation Regulations restrictions, within applicable airport-adjacent areas where these regulations or guidelines apply. Specifically, FAR Section 25.581, Lighting Protection, requires that an airplane must be protected against catastrophic effects of lighting (Title 14 C.F.R.). Furthermore, implementation of mitigation measures **MM-AES-1** and **MM-AES-2**, would ensure that potential light and glare impacts from future projects are reduced to a **less-than-significant** level. Overall, the GCSP would help to achieve the General Plan's goals. As such, the cumulative impacts to scenic vistas, visual character and quality, and light and glare are considered **less than significant with mitigation incorporated**.

3.1.6 Mitigation Measures

State CEQA Guidelines Section 15126.4 requires EIRs to describe feasible measures that can minimize significant adverse impacts. The following mitigation measures have been evaluated for feasibility and are incorporated in order to reduce potentially significant impacts related to aesthetics during operation of future development under the Proposed Project.

Mitigation measures **MM-AES-1** and **MM-AES-2** shall be implemented to reduce potential light and glare impacts of future development under the Proposed Project:

MM-AES-1 **Lighting Plans and Specifications.** Prior to the issuance of building permits for new development projects, the applicant shall submit lighting plans and specifications for all exterior lighting fixtures, light standards, and window treatments (e.g., consideration of specialized manicuring or tinting to reduce glare from interior lighting) to the City of Long Beach's Development Services Department for review and approval. The plans shall include a photometric design study demonstrating that all outdoor light fixtures to be installed are designed or located in a manner as to contain the direct rays from the lights on site and to minimize spillover of light onto surrounding properties or roadways. All parking structure lighting shall be shielded and directed away from residential uses. Open space areas are encouraged in the Plan. Lighting for such features shall be designed so that light is directed so as to provide adequate security and minimal spill-over or nuisance lighting.

MM-AES-2 **Light Fixture Shielding.** Prior to the issuance of building permits for development projects within the Globemaster Corridor Specific Plan area, applicants shall demonstrate to the City of Long Beach's Development Services Department that all nighttime lighting installed on private property within the Globemaster Corridor Specific Plan area shall be shielded, directed away from residential and other light-sensitive uses, and confined to the Plan Area. Rooftop lighting, security lighting, or aviation warning lights, shall be in accordance with Airport/Federal Aviation Administration (FAA) requirements. Additionally, all lighting shall comply with all applicable Airport Land Use Plan (ALUP) Safety Policies and FAA regulations.

3.1.7 Significance After Mitigation

Implementation of mitigation measures **MM-AES-1** and **MM-AES-2** would ensure impacts are **less than significant**.

3.1.8 References

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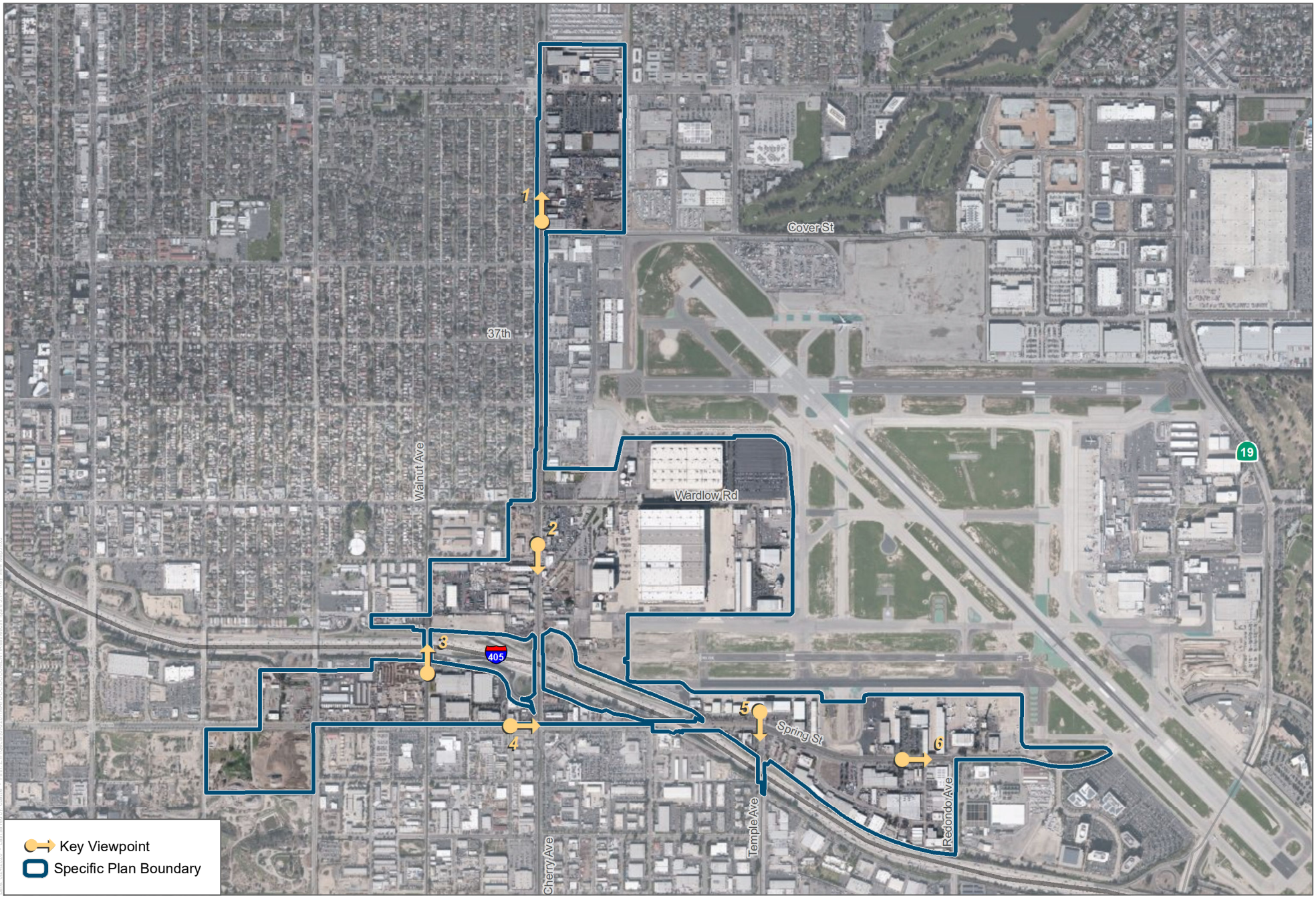

SOURCE: Bing 2018

DUDEK

0 1,000 2,000 Feet

FIGURE 3.1-1

Key View Map

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FIGURE 3.1-2a

Key View 1: View Northeast from Cover Street and Cherry

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FIGURE 3.1-2b

Key View 2: View South from Wardlow Road and Cherry Avenue

Globemaster Corridor Specific Plan Draft PEIR/PEIS

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FIGURE 3.1-2c

Key View 3: View North from WalnutTemple Avenue Overpass

Globemaster Corridor Specific Plan Draft PEIR/PEIS

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FIGURE 3.1-2d

Key View 4: View East from East Spring Street and Cherry Avenue

Globemaster Corridor Specific Plan Draft PEIR/PEIS

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FIGURE 3.1-2e

Key View 5: View South from East Spring Street and Temple Avenue

Globemaster Corridor Specific Plan Draft PEIR/PEIS

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FIGURE 3.1-2f

Key View 6: View East from East Spring Street and Redondo Avenue

Globemaster Corridor Specific Plan Draft PEIR/PEIS

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3.2 AIR QUALITY

This section describes the existing air quality setting of the Globemaster Corridor Specific Plan (GCSP; Proposed Project) area, identifies air quality regulatory requirements, and evaluates potentially adverse air quality impacts associated with construction and operation of the Proposed Project. Modeling data and information related to the air quality analysis have been provided in Appendix B-1, Emission Calculations; additional information related to health effects is also provided in Appendix B-2, Health Effects from Criteria Air Pollutants Memorandum.

The Initial Study (IS) and Notice of Preparation (NOP) are contained in Appendix A-1, Initial Study; and Appendix A-2, Notice of Preparation, respectively. Comments regarding air quality, received in response to the NOP (see Appendix A-3, Notice of Preparation Comment Letters), specifically related to preparation of the analysis consistent with the South Coast Air Quality Management District's (SCAQMD's) guidance, were received during the scoping process, and have been considered in the preparation of the analyses presented in this section.

The IS found that the Proposed Project would have potentially significant impact as it relates to air quality (Appendix A-1). As such, all potential air quality impacts are addressed in this Draft Program Environmental Impact Report (PEIR)/Draft Program Environmental Impact Statement (PEIS).

3.2.1 Existing Conditions

3.2.1.1 Climate and Topography

The Proposed Project is located within the South Coast Air Basin (SCAB). The SCAB is a 6,745-square-mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The SCAB's air pollution problems are a consequence of the combination of emissions from the nation's second-largest urban area, meteorological conditions that hinder dispersion of those emissions, and mountainous terrain surrounding the SCAB that traps pollutants as they are pushed inland with the sea breeze (SCAQMD 2017). Meteorological and topographical factors that affect air quality in the SCAB are described below.[1]

Climate

The SCAB is characterized as having a Mediterranean climate (typified as semiarid with mild winters, warm summers, and moderate rainfall). The general region lies in the semi-permanent high-pressure zone of the eastern Pacific; as a result, the climate is mild and tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds.

[1] The discussion of meteorological and topographical conditions of the SCAB is based on information provided in the *Final 2016 Air Quality Management Plan* (SCAQMD 2017).

Moderate temperatures, comfortable humidity, and limited precipitation characterize the climate in the SCAB. The average annual temperature varies little throughout the SCAB, averaging 75 degrees Fahrenheit (°F). However, with a less-pronounced oceanic influence, the eastern inland portions of the SCAB show greater variability in annual minimum and maximum temperatures. All portions of the SCAB have recorded temperatures over 100°F in recent years. Although the SCAB has a semiarid climate, the air near the surface is moist because of the presence of a shallow marine layer. Except for infrequent periods when dry air is brought into the SCAB by offshore winds, the ocean effect is dominant. Periods with heavy fog are frequent, and low stratus clouds, occasionally referred to as "high fog," are a characteristic climate feature. Annual average relative humidity is 70% at the coast and 57% in the eastern part of the SCAB. Precipitation in the SCAB is typically 9 to 14 inches annually and is rarely in the form of snow or hail because of typically warm weather. Most of the rainfall in Southern California occurs between late fall and early spring, with most rain typically in the months of January and February.

The City of Long Beach's (City's) climate is characterized by relatively low rainfall, with warm summers and mild winters. Average temperatures range from a high of 84°F in August to a low of 45°F in December (Western Regional Climate Center (WRCC) 2018).[2] Annual precipitation averages about 12 inches, falling mostly from October through April (WRCC 2018).

Sunlight

The presence and intensity of sunlight are necessary prerequisites for the formation of photochemical smog. Under the influence of the ultraviolet radiation of sunlight, certain "primary" pollutants (mainly reactive hydrocarbons and oxides of nitrogen [NO_X][3]) react to form "secondary" pollutants (primarily oxidants). Since this process is time dependent, secondary pollutants can be formed many miles downwind of the emission sources. Southern California also has abundant sunshine, which drives the photochemical reactions that form pollutants such as ozone (O_3) and a substantial portion of fine particulate matter ($PM_{2.5}$, particles less than 2.5 microns in diameter). In the SCAB, high concentrations of O_3 are normally recorded during the late spring, summer, and early autumn months, when more intense sunlight drives enhanced photochemical reactions. Because of the prevailing daytime winds and time-delayed nature of photochemical smog, oxidant concentrations are highest in the inland areas of Southern California.

Temperature Inversions

Under ideal meteorological conditions and irrespective of topography, pollutants emitted into the air mix and disperse into the upper atmosphere. However, the Southern California region

[2] Local climate data for the City is based on the closest and most-representative station measured by the Western Regional Climate Center, which is the Long Beach WSCMO climatological station.

[3] NO_X is a general term pertaining to compounds of nitric oxide (NO), nitrogen dioxide (NO_2) and other oxides of nitrogen.

frequently experiences temperature inversions in which pollutants are trapped and accumulate close to the ground. The inversion, a layer of warm, dry air overlaying cool, moist marine air, is a normal condition in coastal Southern California. The cool, damp, and hazy sea air capped by coastal clouds is heavier than the warm, clear air, which acts as a lid through which the cooler marine layer cannot rise. The height of the inversion is important in determining pollutant concentration. When the inversion is approximately 2,500 feet above mean sea level (amsl), the sea breezes carry the pollutants inland to escape over the mountain slopes or through the passes. At a height of 1,200 feet amsl, the terrain prevents the pollutants from entering the upper atmosphere, resulting in the pollutants settling in the foothill communities. Below 1,200 feet amsl, the inversion puts a tight lid on pollutants, concentrating them in a shallow layer over the entire coastal basin. Usually, inversions are lower before sunrise than during the daylight hours.

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

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

3.2.1.2 Pollutants and Effects

Criteria Air Pollutants

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

air contaminants (TACs), are discussed in the following paragraphs.[4] A more detailed discussion of health effects of criteria air pollutants is provided in Appendix B-2, Health Effects from Criteria Air Pollutants Memorandum.

Ozone. O_3 is a strong-smelling, pale blue, reactive, toxic chemical gas consisting of three oxygen atoms. It is a secondary pollutant formed in the atmosphere by a photochemical process involving the sun's energy and O_3 precursors. These precursors are mainly NO_x and volatile organic compounds (VOCs). The maximum effects of precursor emissions on O_3 concentrations usually occur several hours after they are emitted and many miles from the source. Meteorology and terrain play major roles in O_3 formation, and ideal conditions occur during summer and early autumn on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. O_3 exists in the upper atmosphere O_3 layer (stratospheric O_3) and at the Earth's surface in the troposphere (ground-level O_3).[5] The O_3 that the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) regulate as a criteria air pollutant is produced close to the ground level, where people live, exercise, and breathe. Ground-level O_3 is a harmful air pollutant that causes numerous adverse health effects and is thus considered "bad" O_3. Stratospheric, or "good," O_3 occurs naturally in the upper atmosphere, where it reduces the amount of ultraviolet light (i.e., solar radiation) entering the Earth's atmosphere. Without the protection of the beneficial stratospheric O_3 layer, plant and animal life would be seriously harmed.

O_3 in the troposphere causes numerous adverse health effects; short-term exposures (lasting for a few hours) to O_3 at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes (EPA 2013).

Inhalation of O_3 causes inflammation and irritation of the tissues lining human airways, causing and worsening a variety of symptoms. Exposure to O_3 can reduce the volume of air that the lungs breathe in, thereby causing shortness of breath. O_3 in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. The occurrence and severity of health effects from O_3 exposure vary widely among individuals, even when the dose and the duration of exposure are the same. Research shows adults and children who spend more time outdoors participating in vigorous physical activities are at greater risk from the harmful health effects of O_3 exposure. While there are relatively few studies on the effects of O_3 on children, the available studies show that children are no more or less likely to suffer harmful effects than adults. However, there are a number of reasons why children may be more susceptible to O_3

[4] The descriptions of the criteria air pollutants and associated health effects are based on the U.S. Environmental Protection Agency's (EPA's) Criteria Air Pollutants (EPA 2018) and the California Air Resources Board's (CARB's) Glossary of Air Pollutant Terms (CARB 2019a).

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

and other pollutants. Children and teens spend nearly twice as much time outdoors and engaged in vigorous activities as adults. Children breathe more rapidly than adults and inhale more pollution per pound of their body weight than adults. Also, children are less likely than adults to notice their own symptoms and avoid harmful exposures. Further research may be able to better distinguish between health effects in children and adults. Children, adolescents and adults who exercise or work outdoors, where O_3 concentrations are the highest, are at the greatest risk of harm from this pollutant (CARB 2019b).

Nitrogen Dioxide. NO_2 is a brownish, highly reactive gas that is present in all urban atmospheres. The major mechanism for the formation of NO_2 in the atmosphere is the oxidation of the primary air pollutant nitric oxide (NO), which is a colorless, odorless gas. NO_x plays a major role, together with VOCs, in the atmospheric reactions that produce O_3. NO_x is formed from fuel combustion under high temperature or pressure. In addition, NO_x is an important precursor to acid rain and may affect both terrestrial and aquatic ecosystems. The two major emissions sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers.

A large body of health science literature indicates that exposure to NO_2 can induce adverse health effects. The strongest health evidence, and the health basis for the ambient air quality standards (AAQS) for NO_2, results from controlled human exposure studies that show that NO_2 exposure can intensify responses to allergens in allergic asthmatics. In addition, a number of epidemiological studies have demonstrated associations between NO_2 exposure and premature death, cardiopulmonary effects, decreased lung function growth in children, respiratory symptoms, emergency room visits for asthma, and intensified allergic responses. Infants and children are particularly at risk because they have disproportionately higher exposure to NO_2 than adults due to their greater breathing rate for their body weight and their typically greater outdoor exposure duration. Several studies have shown that long-term NO_2 exposure during childhood, the period of rapid lung growth, can lead to smaller lungs at maturity in children with higher levels of exposure compared to children with lower exposure levels. In addition, children with asthma have a greater degree of airway responsiveness compared with adult asthmatics. In adults, the greatest risk is to people who have chronic respiratory diseases, such as asthma and chronic obstructive pulmonary disease (CARB 2019c).

Carbon Monoxide. CO is a colorless, odorless gas formed by the incomplete combustion of hydrocarbon, or fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, such as the Proposed Project location, automobile exhaust accounts for the majority of CO emissions. CO is a nonreactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions—primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions

are combined with calm atmospheric conditions, which is a typical situation at dusk in urban areas from November to February. The highest levels of CO typically occur during the colder months of the year, when inversion conditions are more frequent.

CO is harmful because it binds to hemoglobin in the blood, reducing the ability of blood to carry oxygen. This interferes with oxygen delivery to the body's organs. The most common effects of CO exposure are fatigue, headaches, confusion and reduced mental alertness, light-headedness, and dizziness due to inadequate oxygen delivery to the brain. For people with cardiovascular disease, short-term CO exposure can further reduce their body's already compromised ability to respond to the increased oxygen demands of exercise, exertion, or stress. Inadequate oxygen delivery to the heart muscle leads to chest pain and decreased exercise tolerance. Unborn babies whose mothers experience high levels of CO exposure during pregnancy are at risk of adverse developmental effects. Unborn babies, infants, elderly people, and people with anemia or with a history of heart or respiratory disease are most likely to experience health effects with exposure to elevated levels of CO (CARB 2019d).

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

Controlled human exposure and epidemiological studies show that children and adults with asthma are more likely to experience adverse responses with SO_2 exposure, compared with the non-asthmatic population. Effects at levels near the 1-hour standard are those of asthma exacerbation, including bronchoconstriction accompanied by symptoms of respiratory irritation such as wheezing, shortness of breath, and chest tightness, especially during exercise or physical activity. Also, exposure at elevated levels of SO_2 (above 1 parts per million [ppm]) results in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality. The elderly and people with cardiovascular disease or chronic lung disease (such as bronchitis or emphysema) are most likely to experience these adverse effects (CARB 2019e).

SO_2 is of concern both because it is a direct respiratory irritant and because it contributes to the formation of sulfate and sulfuric acid in particulate matter (NRC 2005). People with asthma are of particular concern, both because they have increased baseline airflow resistance and because their SO_2-induced increase in airflow resistance is greater than in healthy people, and it increases with the severity of their asthma (NRC 2005). SO_2 is thought to induce airway constriction via neural reflexes involving irritant receptors in the airways (NRC 2005).

Particulate Matter. Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. Coarse particulate matter (PM_{10}) consists of particulate matter that is 10 microns or less in diameter and is about 1/7 the thickness of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. Fine particulate matter ($PM_{2.5}$) consists of particulate matter that is 2.5 microns or less in diameter and is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., from motor vehicles and power generation and industrial facilities), residential fireplaces, and woodstoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides (SO_x), NO_x, and VOCs.

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

A number of adverse health effects have been associated with exposure to both $PM_{2.5}$ and PM_{10}. For $PM_{2.5}$, short-term exposures (up to 24-hour duration) have been associated with premature mortality, increased hospital admissions for heart or lung causes, acute and chronic bronchitis, asthma attacks, emergency room visits, respiratory symptoms, and restricted activity days. These adverse health effects have been reported primarily in infants, children, and older adults with preexisting heart or lung diseases. In addition, of all of the common air pollutants, $PM_{2.5}$ is associated with the greatest proportion of adverse health effects related to air pollution, both in the United States and worldwide based on the World Health Organization's Global Burden of Disease Project. Short-term exposures to PM_{10} have been associated primarily with worsening of respiratory diseases, including asthma and chronic obstructive pulmonary disease, leading to hospitalization and emergency department visits (CARB 2017).

Long-term exposure (months to years) to $PM_{2.5}$ has been linked to premature death, particularly in people who have chronic heart or lung diseases, and reduced lung function growth in children. The effects of long-term exposure to PM_{10} are less clear, although several studies suggest a link

between long-term PM_{10} exposure and respiratory mortality. The International Agency for Research on Cancer published a review in 2015 that concluded that particulate matter in outdoor air pollution causes lung cancer (CARB 2017).

Lead. Lead in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline; the manufacturing of batteries, paints, ink, ceramics, and ammunition; and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phaseout of leaded gasoline reduced the overall inventory of airborne lead by nearly 95%. With the phaseout of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are becoming lead-emissions sources of greater concern.

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

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

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

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

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

Volatile Organic Compounds. Hydrocarbons are organic gases that are formed from hydrogen and carbon and sometimes other elements. Hydrocarbons that contribute to formation of O_3 are

referred to and regulated as VOCs (also referred to as reactive organic gases). Combustion engine exhaust, oil refineries, and fossil-fueled power plants are the sources of hydrocarbons. Other sources of hydrocarbons include evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

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

Non-Criteria Air Pollutants

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

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

Diesel Particulate Matter. Diesel particulate matter (DPM) is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is composed of two phases, gas and particle, both of which contribute to health risks. More than 90% of DPM is less than 1 micrometer in diameter (about 1/70th the diameter of a human hair), and thus is a subset of $PM_{2.5}$ (CARB 2019f). DPM is typically composed of carbon particles ("soot," also called black carbon, or BC) and numerous organic

compounds, including over 40 known cancer-causing organic substances. Examples of these chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene (CARB 2019f). The CARB classified "particulate emissions from diesel-fueled engines" (i.e., DPM; 17 CCR 93000) as a TAC in August 1998. DPM is emitted from a broad range of diesel engines: on-road diesel engines of trucks, buses, and cars and off-road diesel engines including locomotives, marine vessels, and heavy-duty construction equipment, among others. Approximately 70% of all airborne cancer risk in California is associated with DPM (CARB 2000). To reduce the cancer risk associated with DPM, CARB adopted a diesel risk reduction plan in 2000 (CARB 2000). Because it is part of $PM_{2.5}$, DPM also contributes to the same non-cancer health effects as $PM_{2.5}$ exposure. These effects include premature death; hospitalizations and emergency department visits for exacerbated chronic heart and lung disease, including asthma; increased respiratory symptoms; and decreased lung function in children. Several studies suggest that exposure to DPM may also facilitate development of new allergies (CARB 2019f). Those most vulnerable to non-cancer health effects are children, whose lungs are still developing, and the elderly, who often have chronic health problems.

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

3.2.1.3 Sensitive Receptors

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

The closest off-site sensitive receptors to the Plan Area include residences of the Bixby Knolls neighborhood and the California Heights Historic District located adjacent to the west side of Cherry Avenue. Schools in the vicinity of the Proposed Project where sensitive receptors may spend considerable time include Burroughs Elementary School (on East 33rd Street in Signal Hill, between Orange Avenue and Gundry Avenue) and the Westerly School of Long Beach (East 29th Street).

3.2.2 Regulatory Setting

3.2.2.1 Federal

Criteria Air Pollutants

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

The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The NAAQS (other than for O_3, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. NAAQS for O_3, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over 1- to 3-year periods, depending on the pollutant. The Clean Air Act requires the EPA to reassess the NAAQS at least every 5 years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed the NAAQS must prepare a State Implementation Plan that demonstrates how those areas will attain the NAAQS within mandated timeframes. A more detailed discussion of the NAAQS, as well as the CAAQS (discussed below), is provided in Appendix B-2, Health Effects from Criteria Air Pollutants Memorandum.

Hazardous Air Pollutants

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

Clean Air Act Conformity / Federal General Conformity Requirements

Under Section 176(c)(1) of the federal Clean Air Act, federal agencies that "engage in, support in any way or provide financial assistance for, license or permit, or approve any activity"[6] must demonstrate that such actions do not interfere with state and local plans to bring an area into attainment with the NAAQS. The program by which a federal agency determines that its action would not obstruct or conflict with air quality attainment plans is called "general conformity." The implementing regulations for general conformity are found in Title 40, Code of Federal Regulations, Part 51, Subpart W. In addition, the SCAQMD has adopted the federal General Conformity regulations as Rule 1901 (General Conformity), which applies to any general federal action which are funded or approved under Title 23 U.S.C.

Under the general conformity regulations, both the direct and indirect emissions associated with a federal action must be evaluated. Subpart W defines direct emissions as:

> *[T]hose emissions of a criteria pollutant or its precursors that are caused or initiated by the Federal action and occur at the same time and place as the action.*

Indirect emissions are defined as:

> *[T]hose emissions of a criteria pollutant or its precursors that:*
>
> *(1) Are caused by the Federal action, but may occur later in time and/or may be farther removed in distance from the action itself but are still reasonably foreseeable; and*
>
> *(2) The Federal agency can practicably control and will maintain control over due to a continuing program responsibility of the Federal agency.*

3.2.2.2 State

Criteria Air Pollutants

The federal Clean Air Act delegates the regulation of air pollution control and the enforcement of the NAAQS to the states. In California, the task of air quality management and regulation has been legislatively granted to CARB, with subsidiary responsibilities assigned to air quality management districts and air pollution control districts at the regional and county levels. CARB, which became part of the California Environmental Protection Agency (CalEPA) in 1991, is responsible for

[6] Title 40, Code of Federal Regulation, Part 51, Section 51.850.

ensuring implementation of the California Clean Air Act of 1988, responding to the federal Clean Air Act, and regulating emissions from motor vehicles and consumer products.

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

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

The NAAQS and CAAQS are presented in Table 3.2-1, Ambient Air Quality Standards.

Table 3.2-1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	*Primary[c,d]*	*Secondary[c,e]*
O_3	1 hour	0.09 ppm (180 μg/m³)	—	Same as Primary Standard[f]
	8 hours	0.070 ppm (137 μg/m³)	0.070 ppm (137 μg/m³)[f]	
NO_2[g]	1 hour	0.18 ppm (339 μg/m³)	0.100 ppm (188 μg/m³)	Same as Primary Standard
	Annual Arithmetic Mean	0.030 ppm (57 μg/m³)	0.053 ppm (100 μg/m³)	
CO	1 hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	None
	8 hours	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	
SO_2[h]	1 hour	0.25 ppm (655 μg/m³)	0.075 ppm (196 μg/m³)	—
	3 hours	—	—	0.5 ppm (1,300 μg/m³)
	24 hours	0.04 ppm (105 μg/m³)	0.14 ppm (for certain areas)[g]	—
	Annual	—	0.030 ppm (for certain areas)[g]	—

Table 3.2-1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	*Primary*[c,d]	*Secondary*[c,e]
PM_{10}[i]	24 hours	50 μg/m³	150 μg/m³	Same as Primary Standard
	Annual Arithmetic Mean	20 μg/m³	—	
$PM_{2.5}$[i]	24 hours	—	35 μg/m³	Same as Primary Standard
	Annual Arithmetic Mean	12 μg/m³	12.0 μg/m³	15.0 μg/m³
Lead[j,k]	30-day Average	1.5 μg/m³	—	—
	Calendar Quarter	—	1.5 μg/m³ (for certain areas)[k]	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 μg/m³	
Hydrogen sulfide	1 hour	0.03 ppm (42 μg/m³)	—	—
Vinyl chloride[j]	24 hours	0.01 ppm (26 μg/m³)	—	—
Sulfates	24 hours	25 μg/m³	—	—
Visibility reducing particles	8 hour (10:00 a.m. to 6:00 p.m. PST)	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70%	—	—

Source: CARB 2016.

Notes: ppm = parts per million by volume; μg/m³ = micrograms per cubic meter; mg/m³= milligrams per cubic meter.

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

b National standards (other than O_3, NO_2, SO_2, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 micrograms per cubic meter (μg/m³) is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

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

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

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

f On October 1, 2015, the primary and secondary NAAQS for O_3 were lowered from 0.075 ppm to 0.070 ppm

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

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

standard, except that in areas designated nonattainment of the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

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

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

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

Toxic Air Contaminants

The state Air Toxics Program was established in 1983 under AB 1807 (Tanner). The California TAC list identifies more than 700 pollutants, of which carcinogenic and noncarcinogenic toxicity criteria have been established for a subset of these pollutants pursuant to the California Health and Safety Code. In accordance with AB 2728, the state list includes the (federal) HAPs. In 1987, the Legislature enacted the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) to address public concern over the release of TACs into the atmosphere. AB 2588 law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years. TAC emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, the facility operator is required to communicate the results to the public in the form of notices and public meetings.

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

California Health and Safety Code Section 41700

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

3.2.2.3 Regional and Local

South Coast Air Quality Management District

While CARB is responsible for the regulation of mobile emissions sources within the state, local air quality management districts and air pollution control districts are responsible for enforcing standards and regulating stationary sources. SCAQMD is the regional agency responsible for the regulation and enforcement of federal, state, and local air pollution control regulations in SCAB, where the Proposed Project is located. The SCAQMD operates monitoring stations in the SCAB, develops rules and regulations for stationary sources and equipment, prepares emissions inventory and air quality management planning documents, and conducts source testing and inspections. The SCAQMD's Air Quality Management Plans (AQMPs) include control measures and strategies to be implemented to attain the CAAQS and NAAQS in the SCAB. The SCAQMD then implements these control measures as regulations to control or reduce criteria pollutant emissions from stationary sources or equipment.

The most-recently adopted AQMP is the 2016 AQMP (SCAQMD 2017), which was adopted by the SCAQMD governing board on March 3, 2017. The 2016 AQMP is a regional blueprint for achieving air quality standards and healthful air. The 2016 AQMP addresses criteria air pollutant emissions from ocean-going vessels, which are considered federal sources, and includes emissions associated with marine vessels and engines in the baseline year and future forecasts. The 2016 AQMP's overall control strategy is an integral approach relying on fair-share emission reductions from federal, state, and local levels. The 2016 AQMP is composed of stationary and mobile source emission reductions from traditional regulatory control measures, incentive-based programs, co-benefits from climate programs, mobile source strategies, and reductions from federal sources (SCAQMD 2017). These control strategies are to be implemented in partnership with CARB and the EPA.

Applicable Rules

Emissions that would result from stationary and area sources during operation under the Proposed Project may be subject to SCAQMD rules and regulations, which may include the following:

Rule 201 – Permit to Construct: This rule establishes an orderly procedure for the review of new and modified sources of air pollution through the issuance of permits. Rule 201 specifies that any facility installing nonexempt equipment that causes or controls the emissions of air pollutants must first obtain a permit to construct from the SCAQMD.

Rule 202 – Temporary Permit to Operate: This rule requires a person to obtain a permit to construct prior to operating new equipment, altered equipment, or existing equipment that is being put into service.

Rule 203 – Permit to Operate: This rule states that a person shall not operate or use any equipment permit unit, the use of which may cause the issuance of air contaminants, or the use of which may reduce or control the issuance of air contaminants, without first obtaining a written permit to operate from the Executive Officer.

Rule 301 – Permitting and Associated Fees: The rule establishes a fee schedule for the issuance of permits to cover the cost of the SCAQMD evaluation, planning, inspection, and monitoring related to permitting.

Rule 401 – Visible Emissions: This rule establishes the limit for visible emissions from stationary sources for a period or periods aggregating more than three minutes in any hour. This rule prohibits visible emissions dark or darker than Ringelmann No. 1 for periods greater than three minutes in any hour or such opacity which could obscure an observer's view to a degree equal or greater than does smoke.

Rule 402 – Nuisance: This rule prohibits the discharge of air pollutants from a facility that cause injury, detriment, nuisance, or annoyance to the public or damage to business or property.

Rule 403 – Fugitive Dust: This rule requires fugitive dust sources to implement best available control measures for all sources and prohibits all forms of visible particulate matter from crossing any property line. SCAQMD Rule 403 is intended to reduce PM_{10} emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust.

Rule 431.2 – Sulfur Content of Liquid Fuels: The purpose of this rule is to limit the sulfur content in diesel and other liquid fuels for the purpose both of reducing the formation of SO_x and particulates during combustion and of enabling the use of add-on control devices for diesel-fueled

internal combustion engines. The rule applies to all refiners, importers, and other fuel suppliers such as distributors, marketers, and retailers, as well as to users of diesel, low-sulfur diesel, and other liquid fuels for stationary-source applications in the SCAQMD. The rule also affects diesel fuel supplied for mobile source applications.

Rule 1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines: This rule applies to stationary and portable engines rated at greater than 50 horsepower. The purpose of Rule 1110.2 is to reduce NO_x, VOC, and CO emissions from engines. Emergency engines, including those powering standby generators, are generally exempt from the emissions and monitoring requirements of this rule as they have permit conditions that limit operation to 200 hours or less per year as determined by an elapsed operating time meter.

Rule 1113 – Architectural Coatings: This rule requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.

Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters: This rule applies to boilers, steam generators, and process heaters of equal to or greater than 5 million British thermal units (Btu) per hour rated heat input capacity used in all industrial, institutional, and commercial operations with the exception of boilers used by electric utilities to generate electricity, boilers and process heaters with a rated heat input capacity greater than 40 million Btu per hour that are used in petroleum refineries, and sulfur plant reaction boilers. Under this rule, the NO_x and CO exhaust concentration for Group III boilers (rated from 5 to less than 20 million Btu per hour) are limited to 9 ppm and 400 ppm, respectively, by volume referenced at 3% oxygen on a dry basis.

Rule 1301 – General: This regulation sets forth pre-construction review requirements for new, modified, or relocated facilities, to ensure that the operation of such facilities does not interfere with progress in attainment of the national ambient air quality standards, and that future economic growth within the SCAQMD is not unnecessarily restricted. The specific air quality goal of this regulation is to achieve no net increases from new or modified permitted sources of nonattainment air contaminants or their precursors

Rule 1303 – Requirements (New Source Review): This rule requires pre-construction review for new, modified, or relocated facilities, to ensure that the operation of such facilities does not interfere with progress in attainment of the national ambient air quality standards. The goal is to achieve no net increases from new or modified permitted sources of nonattainment air contaminants of their precursors.

Rule 1401 – New Source Review of Toxic Air Contaminants: This rule specifies limits for maximum individual cancer risk (MICR), cancer burden, and noncancer acute and chronic

hazard index (HI) from new permit units, relocations, or modifications to existing permit units, which emit toxic air contaminants listed in Table I of Rule 1401. The rule establishes allowable risks for permit units requiring new permits pursuant to Rules 201 or 203.

Rule 1470 – Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines: This rule shall apply to any person who owns or operates a stationary CI engine in the SCAQMD with a rated brake horsepower greater than 50 (>50 bhp), except as provided in subdivision (h). This rule regulates the fuel, hours of operation, maintenance, and reporting requirements for applicable engines.

Rule 2202 – On-Road Motor Vehicle Mitigation Options: The purpose of this rule is to provide employers with a menu of options to reduce mobile source emissions generated from employee commutes, to comply with federal and state Clean Air Act requirements, Health & Safety Code Section 40458, and Section 182(d)(1)(B) of the federal Clean Air Act. This Rule applies to any employer who employs 250 or more employees on a full or part-time basis at a worksite for a consecutive six-month period calculated as a monthly average, except as provided in subdivision (l) of this Rule.

Regulation IX - Standards of Performance for New Stationary Sources (NSPS): This regulation requires all new, modified, or reconstructed sources of air pollution to comply with criteria air pollutant emission standards established for individual industrial or source categories.

Regulation X - National Emission Standards for Hazardous Air Pollutants (NESHAPS): This regulation requires all new, modified, or reconstructed sources of air pollution to comply with air toxics emission standards established for individual industrial or source categories. The Maximum Achievable Control Technology standards requires the maximum degree of emission reduction achievable for particular source categories.

Regulation XIII – New Source Review: This regulation sets preconstruction review requirements for new, modified, or relocated facilities to ensure that the operation of such facilities does not interfere with progress in attainment of the NAAQS and that future economic growth within SCAQMD is not unnecessarily restricted. The specific air quality goal of this regulation is to achieve no net increases from new or modified permitted sources of nonattainment air contaminants or their precursors. In addition to nonattainment air contaminants, this regulation will also limit emissions increases of ammonia and O_3-depleting compounds from new, modified, or relocated facilities by requiring the use of best available control technology.

Regulation XIV – Toxics and Other Non-Criteria Pollutants: This regulation includes rules that regulate toxics and other non-criteria pollutants. It provides specifications for maximum individual cancer risk, cancer burden, and noncancer acute and chronic hazard index from new permit units, relocations, or modifications to existing permit units that emit TACs. The rules

establish allowable risks for permit units requiring new permits pursuant to Rules 201 or 203. Under this regulation, Rule 1401 (New Source Review of Toxic Air Contaminants) specifies limits for maximum individual cancer risk, cancer burden, and non-cancer acute and chronic hazard indices from new permit units, relocations, or modifications to existing permit units that emit TACs listed in the rule.

Regulation XIV – Rule 1403, Asbestos Emissions from Demolition/Renovation Activities: This rule states that an owner or operator of any demolition or renovation activity is required to have an asbestos study performed prior to demolition and to provide notification to SCAQMD prior to commencing demolition activities.

Southern California Association of Governments

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

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

On April 7, 2016, SCAG's Regional Council adopted the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS). The 2016 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The 2016 RTP/SCS charts a course for closely integrating land use and transportation so that the region can grow smartly and sustainably. The 2016 RTP/SCS was prepared through a collaborative, continuous, and comprehensive process with input from local governments, county transportation commissions, tribal governments, nonprofit organizations, businesses, and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside,

San Bernardino, and Ventura. In June 2016, SCAG received its conformity determination from the Federal Highway Administration and the Federal Transit Administration indicating that all air quality conformity requirements for the 2016 RTP/SCS and associated 2015 Federal Transportation Improvement Program Consistency Amendment through Amendment 15-12 have been met (SCAG 2016). The SCAQMD 2016 AQMP applies the updated SCAG growth forecasts assumed in the 2016 RTP/SCS.

SCAG has developed Connect SoCal, the 2020-2045 RTP/SCS, which is a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals. Connect SoCal charts a path toward a more mobile, sustainable and prosperous region by making connections between transportation networks, between planning strategies and between the people whose collaboration can improve the quality of life for Southern Californians. Connect SoCal embodies a collective vision for the region's future and is developed with input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura. On May 7, 2020, SCAG's Regional Council adopted Connect SoCal for federal transportation conformity purposes only. In light of the COVID-19 pandemic, the Regional Council will consider approval of Connect SoCal in its entirety and for all other purposes within 120 days from May 7, 2020.

City of Long Beach

General Plan

Air Quality Element

The City's General Plan addresses air quality in the Air Quality Element and contains goals and policies and actions in relation to government organization roles and responsibilities, ground transportation, air transportation, land use, particulate emissions, energy conservation, and education. The following goals and policies in the Air Quality Element that may apply to the Proposed Project are listed below.

Governmental Organization, Roles, and Responsibility

- **Goal 1:** Effective coordination of air quality improvement efforts in the South Coast Air Basin, the Southeast Los Angeles County (SELAC) subregion of SCAG, and other agencies.
- **Policy 1.2:** Encourage Community Participation. Involve environmental groups, the business community, special interests, and the general public in the formulation and implementation of programs that effectively reduce airborne pollutants.

Ground Transportation

- **Goal 2:** A diverse and efficient ground transportation system that minimizes air pollutant emissions.
- **Policy 2.1.1:** Reduce Vehicle Trips. Use incentives, regulations, and transportation demand management techniques, in cooperation with other jurisdictions in the South Coast Air Basin to eliminate vehicle trips that would otherwise occur.
- **Policy 2.1.2:** Reduce Vehicle Miles Traveled. Use incentives, regulations, and transportation demand management in cooperation with other jurisdictions in the South Coast Air Basin, to reduce vehicle miles traveled.
- **Policy 2.1.3:** Increase Cost-Effectiveness of Transportation and Parking Systems. Make cost-effective improvements to transportation and parking systems that will reduce traffic congestion and resulting emissions.
- **Policy 2.2.1:** Modify Work Schedules. Promote and establish modified work schedules that reduce peak period auto travel.
- **Policy 2.3.1:** Expand Transit in the City and the Region. Cooperate in efforts to expand all forms of mass transit within the City and the South Coast Air Basin.
- **Policy 2.4.1:** Promote Non-Motorized Transportation. Promote convenient and continuous bicycle paths and pleasant pedestrian environments that will encourage non-motorized travel within the City.
- **Policy 2.5.1:** Manage the Parking Supply. Manage the City's parking supply to inhibit auto use, while ensuring that economic development goals are not sacrificed.
- **Policy 2.6.1:** Support Legislation. Participate with other local governments in seeking State and Federal legislation to improve vehicle/transportation technology and establish a direct link between the true cost of emissions and the sources of pollution.
- **Policy 2.6.2:** Fleet Conversion to Clean Fuels. Play a leadership role in the conversion to clean fuels by promoting the increased use of compressed natural gas (CNG), electric vehicles, and other alternative fuels.

Land Use

- **Goal 5:** A pattern of land uses that can be efficiently served by a diversified transportation system and that directly and indirectly minimizes air pollutants.
- **Policy 5.1:** Manage Growth. Regulate land use and promote development in a manner that will support established transit services and reduce the need for the automobile.

- **Policy 5.2:** Balance Growth. Improve the balance between jobs and housing to create a more efficient urban form.

Particulate Emissions

- **Goal 6:** Minimize particulate emissions from the construction and operation of roads and buildings, from mobile sources, and from the transportation, handling and storage of materials.
- **Policy 6.1:** Control Dust. Further reduce particulate emissions from roads, parking lots, construction sites, unpaved alleys, and port operations and related uses.

Energy Conservation

- **Goal 7:** Reduce emissions through reduced energy consumption.
- **Policy 7.1:** Energy Conservation. Reduce energy consumption through conservation improvements and requirements.
- **Policy 7.2:** Recycle Wastes. Promote local recycling of wastes and the use of recycled materials.

Mobility Element

The City's Mobility Element (City of Long Beach 2013) of the General Plan aims at creating a safe, efficient, balanced and multimodal mobility network, maintaining and enhancing air, ground, and water transportation capacity, and leading the region by example with innovative and experimental practices, and includes goals, policies and actions that help reduce criteria air pollutant emissions through more efficient transportation. The goals, policies, and strategies of the City's Mobility Element that may apply to the Proposed Project are presented below.

Mobility of People

- **Goal 1:** Create a safe, efficient, balanced, and multimodal mobility network.
- **Strategy 1:** Establish a network of complete streets that complements the related street type.
- **Policy 1-9:** Increase mode shift of transit, pedestrians, and bicycles.
- **Policy 1-12:** Encourage large employers to provide transit subsidies, bicycle facilities, alternative work schedules, ridesharing, telecommuting and work-at-home programs, employee education, and preferential parking for carpools/vanpools.
- **Policy 1-17:** Develop land use policies that focus development potential in locations best served by transit.
- **Strategy 2:** Reconfigure streets to emphasize their modal priorities.

- **Policy 2-17:** Ensure safe, convenient, and adequate, on- and off-street bicycle parking facilities to accommodate and encourage residents to cycle for commuting and daily needs.
- **Strategy 3:** Strategically improve congested intersections and corridors.
- **Policy 4-3:** Develop a new Multimodal Level of Service (MMLOS) methodology that includes the following components:
    - Emphasis on pedestrian and bicycle access and circulation.
    - Maintenance of appropriate emergency vehicle access and response time.
    - Support for reduced vehicle miles traveled (VMT).
    - Considers, but does not deem, auto congestion in Downtown or Long Beach Boulevard Transit-Oriented Development (TOD) district to be an impact.
- **Strategy 5:** Reduce the environmental impacts of the transportation system.
- **Policy 5-2:** Reduce VMT and vehicle trips through the use of alternative modes of transportation and Transportation Demand Management (TDM).
- **Policy 5-3:** Encourage the use of low- or no-emission vehicles to reduce pollution.
- **Policy 5-4:** Promote car-sharing and Neighborhood Electric Vehicle ownership as an important means to reduce traffic congestion.
- **Policy 5-5:** Sustain the recent improvements in air quality and achieve further significant progress in such improvements to meet State and federal mandates.
- **Strategy 6:** Manage the supply of parking.
- **Policy 6-3:** Where appropriate, encourage the conversion of on-street parking space for expanded sidewalk widths or landscaping.
- **Policy 6-7:** Support using parking supply and pricing as a strategy to encourage use of non-automobile modes where feasible.
- **Policy 6-8:** Where applicable, encourage users to park once to meet all of their travel needs within the City.
- **Policy 6-11:** Encourage the use of transit, carpooling, and walking to reduce the need for parking.
- **Policy 6-12:** Promote transit-oriented development with reduced parking requirements around appropriate transit hubs and stations to facilitate the use of available transit services.
- **Policy 6-13:** Consider reducing parking requirements for mixed-use developments, for developments providing shared parking or a comprehensive TDM Program, or developments located near major transit hubs.

- **Policy 6-15:** Encourage and provide incentives for commercial, office, and industrial development to provide preferred parking for carpools, vanpools, electric vehicles, and flex cars.

Mobility of Goods

- **Goal 3:** Lead the region by example with innovative and experimental practices.
- **Strategy 10:** Be a leader in regional cooperation on transportation issues.
- **Strategy 11:** Adapt mobility strategies and programs based on new concepts and technologies that reduce environmental impacts and increase quality of life.
- **Strategy 12:** Develop freight-related improvements consistent with the regional transportation network.
- **Policy 13-2:** Reduce truck congestion and parking impacts on city streets.
- **Strategy 14:** Reduce the air quality impacts of freight transportation and Port-related traffic.
- **Policy 14-1:** Provide for the efficient, clean, and safe movement of goods to support commerce and industry.
- **Policy 14-2:** Adopt and enforce truck routes to minimize the impacts of truck emissions on the community.
- **Policy 14-3:** Reduce congestion on freeways and designated truck routes.

2019 Land Use Element

On December 3, 2019, the City Council adopted a resolution adopting the updated Land Use Element to the Long Beach General Plan, replacing the existing Land Use Element comprised of policies and the adopted General Plan Land Use Designation maps, with the updated Land Use Element, including revised policies and the PlaceType and Height maps. The 2019 Land Use Element of the City's General Plan contains the following strategies and policies related to air quality:

- **Strategy No. 15**: Protect neighborhoods from adverse environmental conditions.
- **LU Policy 15-1**: Develop public health and environmental protection programs that promote equity and that provide for the fair treatment of all Long Beach residents, regardless of race, age, culture, income, or geographic location.
- **LU-M-48**: Continue to develop and implement innovative programs aimed at reducing the air pollutants from port operations (e.g., San Pedro Bay Clean Air Action Plan, Clean Truck Programs, Main Engine Low-Sulfur Fuel Incentive Program, and Shoreside Electricity).

Sustainable City Action Plan

The City's Sustainable City Action Plan (SCAP) was adopted in February 2010. The SCAP is intended to guide operational, policy, and financial decisions to create a more sustainable Long Beach. The SCAP includes initiatives, goals and actions that will move Long Beach toward becoming a sustainable city. These goals and actions included in the SCAP relate to buildings and neighborhoods, energy, green economy and lifestyle, transportation, urban nature, waste reduction, and water.

3.2.2.4 Air Quality Conditions

Regional and Local Air Quality Conditions

SCAB Attainment Designation

Pursuant to the 1990 federal Clean Air Act amendments, the EPA classifies air basins (or portions thereof) as "attainment" or "nonattainment" for each criteria air pollutant based on whether the NAAQS have been achieved. Generally, if the recorded concentrations of a pollutant are lower than the standard, the area is classified as "attainment" for that pollutant. If an area exceeds the standard, the area is classified as "nonattainment" for that pollutant. If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated as "unclassified" or "unclassifiable." The designation of "unclassifiable/attainment" means that the area meets the standard or is expected to be meet the standard despite a lack of monitoring data. Areas that achieve the standards after a nonattainment designation are re-designated as maintenance areas and must have approved Maintenance Plans to ensure continued attainment of the standards. The California Clean Air Act, like its federal counterpart, called for the designation of areas as "attainment" or "nonattainment," but based on CAAQS rather than the NAAQS. Table 3.2-2 depicts the current attainment status of the SCAB with respect to the NAAQS and CAAQS.

Table 3.2-2
South Coast Air Basin Attainment Classification

Pollutant	Designation/Classification	
	National Standards	*California Standards*
Ozone (O_3), 1-hour	No National Standard	**Nonattainment**
Ozone (O_3), 8-hour	**Extreme Nonattainment**	**Nonattainment**
Nitrogen Dioxide (NO_2)	Unclassifiable/Attainment	Attainment
Carbon Monoxide (CO)	Attainment/Maintenance	Attainment
Sulfur Dioxide (SO_2)	Unclassifiable/Attainment	Attainment
Coarse Particulate Matter (PM_{10})	Attainment/Maintenance	**Nonattainment**
Fine Particulate Matter ($PM_{2.5}$)	**Serious Nonattainment**	**Nonattainment**

Table 3.2-2
South Coast Air Basin Attainment Classification

Pollutant	Designation/Classification	
	National Standards	*California Standards*
Lead (Pb)	Nonattainment	Attainment
Hydrogen Sulfide	No National Standard	Unclassified
Sulfates	No National Standard	Attainment
Visibility-Reducing Particles	No National Standard	Unclassified
Vinyl Chloride	No National Standard	No designation

Sources: EPA 2020a (national); CARB 2019g (California).
Notes: Bold text = not in attainment; Attainment = meets the standards; Attainment/Maintenance = achieves the standards after a nonattainment designation; Nonattainment = does not meet the standards; Unclassified or Unclassifiable = insufficient data to classify; Unclassifiable/Attainment = meets the standard or is expected to be meet the standard despite a lack of monitoring data.

In summary, the SCAB is designated as a nonattainment area for federal and state O_3 standards and federal and state $PM_{2.5}$ standards. The SCAB is designated as a nonattainment area for state PM_{10} standards; however, it is designated as an attainment area for federal PM_{10} standards. The SCAB is designated as an attainment area for federal and state CO standards, federal and state NO_2 standards, and federal and state SO_2 standards. While the SCAB has been designated as nonattainment for the federal rolling 3-month average lead standard, it is designated attainment for the state lead standard (EPA 2020a, CARB 2019g).

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

Local Ambient Air Quality

CARB, air districts, and other agencies monitor ambient air quality at approximately 250 air quality monitoring stations across the state. SCAQMD monitors local ambient air quality at the Plan Area. Air quality monitoring stations usually measure pollutant concentrations 10 feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations. The most recent background ambient air quality data from 2016 to 2018 are presented in Table 3.2-3, Local Ambient Air Quality Data.

The North Long Beach monitoring station, located at 3648 North Long Beach Boulevard, California, 90807, is the nearest air quality monitoring station to the Plan Area, located

approximately 1.2 miles west of the Proposed Project area. Because not all pollutants are monitored at the North Long Beach monitoring station, air quality data from the Long Beach Webster Street monitoring station (2425 Webster Street,[7] California 90810, approximately 2.5 miles southwest from the Proposed Project area) is also presented. Air quality data for $PM_{2.5}$ from the North Long Beach station and air quality data for O_3, NO_2, CO, SO_2, and PM_{10} from the Webster Street monitoring station are provided in Table 3.2-3. The data collected at these two stations is considered representative of the air quality experienced in the Proposed Project vicinity. The number of days exceeding the ambient air quality standards is also shown in Table 3.2-3.

Table 3.2-3
Local Ambient Air Quality Data

Monitoring Station	Unit	Averaging Time	Agency/ Method	Ambient Air Quality Standard	Measured Concentration by Year			Exceedances by Year		
					2016	*2017*	*2018*	*2016*	*2017*	*2018*
Ozone (O_3)										
Webster Street	ppm	Maximum 1-hour concentration	California	0.09	0.079	0.082	0.074	0	0	0
	ppm	Maximum 8-hour concentration	California	0.070	0.059	0.068	0.063	0	0	0
			National	0.070	0.059	0.068	0.063	0	0	0
Nitrogen Dioxide (NO_2)										
Webster Street	ppm	Maximum 1-hour concentration	California	0.18	0.075	0.089	0.085	0	0	0
			National	0.100	0.0756	0.0895	0.0853	0	0	0
	ppm	Annual concentration	California	0.030	0.018	0.018	0.017	—	—	—
			National	0.053	—	—	—	—	—	—
Carbon Monoxide (CO)										
Webster Street	ppm	Maximum 1-hour concentration	California	20	—	—	—	—	—	—
			National	35	3.3	3.9	1.8	0	0	0
	ppm	Maximum 8-hour concentration	California	9.0	—	—	—	—	—	—
			National	9	2.2	2.6	1.5	0	0	0
Sulfur Dioxide (SO_2)										
Webster Street	ppm	Maximum 1-hour concentration	National	0.075	0.0178	0.0197	0.0105	0	0	0
	ppm	Maximum 24-hour concentration	National	0.14	0.036	0.032	0.020	0	0	0
	ppm	Annual concentration	National	0.030	0.092	0.085	0.070	0	0	0

[7] The address of 2425 Webster Street has been changed to 2425 Webster Avenue; however, the location is the same.

Table 3.2-3
Local Ambient Air Quality Data

Monitoring Station	Unit	Averaging Time	Agency/ Method	Ambient Air Quality Standard	Measured Concentration by Year			Exceedances by Year		
					2016	*2017*	*2018*	*2016*	*2017*	*2018*
Coarse Particulate Matter (PM_{10})[b]										
Webster Street	µg/m³	Maximum 24-hour concentration	California	50	75.3	79.0	83.0	ND (8)	ND (10)	25.8 (4)
			National	150	75.0	79.0	84.0	0.0 (0)	0.0 (0)	0.0 (0)
	µg/m³	Annual concentration	California	20	ND	ND	32.5	—	—	—
Fine Particulate Matter ($PM_{2.5}$)[b]										
North Long Beach	µg/m³	Maximum 24-hour concentration	National	35	29.3	55.3	79.6	0.0 (0)	4.5 (4)	6.3 (6)
	µg/m³	Annual concentration	California	12	10.3	ND	ND	—	—	—
			National	12.0	10.3	10.9	11.4	—	—	—

Sources: CARB 2020; EPA 2020.

Notes: ppm = parts per million by volume; ND = insufficient data available to determine the value; — = not available; µg/m³ = micrograms per cubic meter.

Data taken from CARB iADAM (http://www.arb.ca.gov/adam) and EPA AirData (http://www.epa.gov/airdata/) represent the highest concentrations experienced over a given year.

Exceedances of national and California standards are only shown for O_3 and particulate matter. Daily exceedances for particulate matter are estimated days because PM_{10} and $PM_{2.5}$ are not monitored daily. All other criteria pollutants did not exceed national or California standards during the years shown. There is no national standard for 1-hourO_3, annual PM_{10}, or 24-hour SO_2, nor is there a California 24-hour standard for $PM_{2.5}$.

Webster Street Monitoring Station is located at 2425 Webster Street, Long Beach, California 90810.

North Long Beach Monitoring Station is located at 3648 North Long Beach Boulevard, Long Beach, California 90807.

[a] Mean does not satisfy minimum data completeness criteria.

[b] Measurements of PM_{10} and $PM_{2.5}$ are usually collected every 6 days and every 1 to 3 days, respectively. Number of days exceeding the standards is a mathematical estimate of the number of days concentrations would have been greater than the level of the standard had each day been monitored. The numbers in parentheses are the measured number of samples that exceeded the standard.

3.2.3 Thresholds of Significance

3.2.3.1 Significance Criteria

The significance criteria used to evaluate the Proposed Project's impacts to air quality is based on the recommendations provided in Appendix G of the State CEQA Guidelines (14 CCR 15000 et seq.). For the purposes of this air quality analysis, a significant impact would occur if the Proposed Project would:

A. Conflict with or obstruct implementation of the applicable air quality plan.

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.

C. Expose sensitive receptors to substantial pollutant concentrations.

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

Appendix G of the State CEQA Guidelines (14 CCR 15000 et seq.) indicates that, where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to determine whether the Proposed Project would have a significant impact on air quality.

The SCAQMD has established Air Quality Significance Thresholds, as revised in April 2019, that set forth quantitative emission significance thresholds below which a project would not have a significant impact on ambient air quality (SCAQMD 2019). The quantitative air quality analysis provided herein applies the SCAQMD thresholds identified in Table 3.2-4, SCAQMD Air Quality Significance Thresholds, to determine the potential for the Proposed Project to result in a significant impact under CEQA.

Table 3.2-4
SCAQMD Air Quality Significance Thresholds

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

Table 3.2-4
SCAQMD Air Quality Significance Thresholds

Criteria Pollutants Mass Daily Thresholds		
Pollutant	*Construction (Pounds per Day)*	*Operation (Pounds per Day)*
PM_{10} 24-hour average	10.4 μg/m³ (construction)[d]	
	2.5 μg/m³ (operation)	
PM_{10} annual average	1.0 μg/m³	
$PM_{2.5}$ 24-hour average	10.4 μg/m³ (construction)[d]	
	2.5 μg/m³ (operation)	

Source: SCAQMD 2019.
Notes: SCAQMD = South Coast Air Quality Management District; VOC = volatile organic compounds; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; TAC = toxic air contaminant; NO_2 = nitrogen dioxide; ppm = parts per million by volume; μg/m³ = micrograms per cubic meter.
GHG emissions thresholds for industrial projects, as added in the March 2015 revision to the SCAQMD Air Quality Significance Thresholds, were not include included in Table 3.2-4 as they are addressed within the GHG emissions analysis and not the air quality analysis.
[a] The phaseout of leaded gasoline started in 1976. Since gasoline no longer contains lead, the project is not anticipated to result in impacts related to lead; therefore, it is not discussed in this analysis.
[b] TACs include carcinogens and noncarcinogens.
[c] Ambient air quality standards for criteria pollutants are based on SCAQMD Rule 1303, Table A-2, unless otherwise stated.
[d] Ambient air quality threshold are based on SCAQMD Rule 403.

The phasing out of leaded gasoline started in 1976. As gasoline no longer contains lead, the Proposed Project is not anticipated to result in impacts related to lead; therefore, it is not discussed in this analysis.

The evaluation of whether the Proposed Project would conflict with or obstruct implementation of the applicable air quality plan (Impact A) is based on the SCAQMD CEQA Air Quality Handbook (SCAQMD 1993), Chapter 12, Sections 12.2 and 12.3. The first criterion assesses if the Proposed Project would result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards of the interim emissions reductions specified in the AQMP, which is addressed in detail in Section 3.2.4, Threshold B. The second criterion is if the Proposed Project would exceed the assumptions in the AQMP or increments based on the year of Proposed Project buildout and phase, as discussed further in Section 3.2.4, Threshold A.

To evaluate the potential for the Proposed Project result in a cumulatively considerable net increase of any criteria pollutant for which the Proposed Project region is non-attainment under an applicable federal or state ambient air quality standard (Threshold B), this analysis applies the SCAQMD's construction and operational criteria pollutants mass daily thresholds, as shown in Table 3.2-4. A project would potentially result in a cumulatively considerable net increase in O_3, which is a nonattainment pollutant, if the project's construction or operational emissions would exceed the SCAQMD VOC or NO_x thresholds shown in Table 3.2-4. These emissions-based thresholds for O_3 precursors are intended to serve as a surrogate for an "ozone significance threshold" (i.e., the potential for adverse O_3 impacts to occur). This approach is used because O_3 is not emitted directly,

and the effects of an individual project's emissions of O_3 precursors (VOC and NO_x) on O_3 levels in ambient air cannot be determined through air quality models or other quantitative methods.

The assessment of the Proposed Project's potential to expose sensitive receptors to substantial pollutant concentrations (Threshold C) includes a localized significance threshold (LST) analysis, as recommended by the SCAQMD, to evaluate the potential of localized air quality impacts to sensitive receptors in the immediate vicinity of the Proposed Project from construction and operation. For project sites of 5 acres or less, the SCAQMD LST Methodology (SCAQMD 2009) includes lookup tables that can be used to determine the maximum allowable daily emissions that would satisfy the localized significance criteria (i.e., the emissions would not cause an exceedance of the applicable concentration limits for NO_2, CO, PM_{10}, and $PM_{2.5}$) without performing project-specific dispersion modeling.

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

a. Source-Receptor Area (SRA) in which the project is located;

b. Size of the project site; and

c. Distance between the project site and the nearest sensitive receptor (e.g., residences, schools, hospitals).

The Plan Area is located in SRA 4 (South Coastal LA County). The SCAQMD provides guidance for applying California Emissions Estimator Model (CalEEMod) to the LSTs. LST pollutant screening level concentration data is currently published for 1-, 2-, and 5-acre sites for varying distances. The maximum number of acres disturbed on the peak day was estimated using the Fact Sheet for Applying CalEEMod to Localized Significance Thresholds (SCAQMD 2014), which provides estimated acres per 8-hour/day for crawler tractors, graders, rubber tired dozers, and scrapers. Based on the SCAQMD guidance, it was estimated that the maximum acres on the Plan Area that would be disturbed by off-road equipment would be 6.0 acres per day during the grading phase.[8] However, because the assumed construction scenario is intended to represent construction

[8] Model scenario assumptions for the grading phase includes 16 pieces of equipment, which is anticipated to over-estimate actual equipment at one site within an already developed area. As noted previously, CalEEMod default assumptions for all construction phases were multiplied by two to account for a condensed 1-year schedule. Construction sites, especially ones within developed areas, are typically restricted by how many pieces of equipment can be safely operated at the same time within the project limits.

of more than one project site within the Plan Area and may not be representative of actual construction, the LSTs for 1-acre and 2-acre disturbance areas are also presented in Table 3.2-5 and the analysis conservatively applies the most stringent thresholds, which are for 1-acre sites.

The closest sensitive receptor to the Proposed Project area are residences located adjacent to Cherry Avenue, which is included in the Plan Area. As residential properties are located directly adjacent to the Proposed Project boundary, the LST receptor distance was assumed to be 82 feet (25 meters), which is the shortest distance provided by the SCAQMD lookup tables. The LST values from the SCAQMD lookup tables for SRA 4 (South Coastal LA County) for a disturbed acreage of 1-, 2-, and 5- acres and a receptor distance of 25 meters are shown in Table 3.2-5.

Table 3.2-5
Localized Significance Thresholds for Source Receptor Area 4
(South Coastal LA County)

Pollutant	Threshold by Acres Disturbed Per Day (Pounds per Day)		
	1-acre	*2-acres*	*5-acres*
NO_2	57	82	123
CO	585	842	1,530
PM_{10}	4	7	14
$PM_{2.5}$	3	5	8

Source: SCAQMD 2009.
Notes: NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter.
LST thresholds were determined based on the values for a distance of 25 meters (82 feet) from the nearest sensitive receptor.

The potential for the Proposed Project to expose sensitive receptors to substantial pollutant concentrations (Section 3.2.4, Threshold C) includes the LST analysis, a CO hotspot analysis, a qualitative health risk discussion, and a qualitative assessment of the health effects of other criteria air pollutants.

The potential for the Proposed Project to result in other emissions, specifically an odor impact, (Section 3.2.4, Threshold D) is based on the Proposed Project's land use types and anticipated construction activity, and the potential for the Proposed Project to create an odor nuisance pursuant to SCAQMD Rule 402.

General Conformity

The first step in the general conformity analysis is the applicability analysis. The National Highway System Designation Act of 1995, (Pub. L. 104–59) added section 176(c)(5) to the Clean Air Act to limit applicability of the conformity programs to areas designated as nonattainment under section 107 of the Clean Air Act and maintenance areas under section 175A of the Clean Air Act only. Therefore, only actions in designated nonattainment and maintenance areas are

subject to the regulation. In addition, the regulations recognize that the vast majority of Federal actions do not result in significant increase in emissions and, therefore, include a number of exemptions such as de minimis emission levels based on the type and severity of the nonattainment problem. In the applicability analysis phase, the Federal agency determines:

1. Whether the action will occur in a nonattainment or maintenance area;
2. Whether one of the specific exemptions apply to the action;
3. Whether the Federal agency has included the action on its list of ''presumed to conform'' actions; or
4. Whether the total direct and indirect emissions are below or above the de minimis levels.

Because the SCAB, where the Proposed Project is located, is a nonattainment and maintenance area for some pollutants, the conformity analysis is applicable per item 1 above. In addition, no exemptions apply to the Proposed Project (item 2) and the Federal agency has not presumed the Proposed Project would confirm at this time (item 3). Therefore, the applicability analysis focuses on item 4.

Regarding item 4, a conformity determination is required for each criteria pollutant or precursor where the total of direct and indirect emissions of the criteria pollutant or precursor in a federal nonattainment or maintenance area would equal or exceed specified annual emission rates, referred to as "de minimis" thresholds or would be "regionally significant." A project's direct and indirect emissions are regionally significant if they exceed 10 percent or more of a nonattainment or maintenance area's emissions inventory for that pollutant. For ozone precursors, PM_{10}, and $PM_{2.5}$, the de minimis thresholds depend on the severity of the nonattainment classification; for other pollutants, the threshold is set at 100 tons per year. As indicated in Section 3.2.2.4, the SCAB is designated as extreme nonattainment for ozone, serious nonattainment for $PM_{2.5}$, and attainment/maintenance for CO and PM_{10} under the NAAQS. The relevant de minimis thresholds for the SCAB are shown in Table 3.2-6, General Conformity De Minimis Thresholds.

Table 3.2-6
General Conformity De Minimis Thresholds

Pollutant	NAAQS Attainment Status	Annual Emissions (tons per year)
NO_X	Extreme Nonattainment (O_3)	10
VOC	Extreme Nonattainment (O_3)	10
CO	Attainment/Maintenance	100
PM_{10}	Attainment/Maintenance	100
$PM_{2.5}$ (direct)	Serious Nonattainment	70
$PM_{2.5}$ (NO_X)[1]	(Serious Nonattainment)	70

Table 3.2-6
General Conformity De Minimis Thresholds

Pollutant	NAAQS Attainment Status	Annual Emissions (tons per year)
$PM_{2.5}$ (VOC and NH_3)[2]	(Serious Nonattainment)	70
$PM_{2.5}$ (SO_X)	(Serious Nonattainment)	70

[1] NO_X is included unless determined not to be a significant precursor. However, the NO_X threshold based on its contribution to ozone is more stringent.

[2] VOC and ammonia (NH_3) are not included unless determined to be a significant precursor. However, the VOC threshold based on their contribution to ozone is more stringent. Ammonia would not be emitted as a result of the proposed action.

When the applicability analysis shows that the action must undergo a conformity determination, Federal agencies must first show that the action will meet all SIP control requirements such as reasonably available control measures, and the emissions from the action will not interfere with the timely attainment of the standard, the maintenance of the standard or the area's ability to achieve an interim emission reduction milestone. Federal agencies then must demonstrate conformity by meeting one or more of the methods specified in the regulation for determining conformity:

1. Demonstrating that the total direct and indirect emissions are specifically identified and accounted for in the applicable SIP,
2. Obtaining a written statement from the State or local agency responsible for the SIP documenting that the total direct and indirect emissions from the action along with all other emissions in the area will not exceed the SIP emission budget,
3. Obtaining a written commitment from the State to revise the SIP to include the emissions from the action,
4. Obtaining a statement from the metropolitan planning organization for the area documenting that any on-road motor vehicle emissions are included in the current regional emission analysis for the area's transportation plan or transportation improvement program,
5. Fully offset the total direct and indirect emissions by reducing emissions of the same pollutant or precursor in the same nonattainment or maintenance area, or
6. Conducting air quality modeling that demonstrates that the emissions will not cause or contribute to new violations of the standards, or increase the frequency or severity of any existing violations of the standards.

3.2.3.2 Approach and Methodology

The GCSP identifies anticipated development by land use type and square footage. However, individual project specifics for construction and operation of future development under the Proposed Project are not yet available. Nonetheless, Proposed-Project-generated emissions were estimated in a good faith effort to disclose the magnitude of potential criteria air pollutant emissions generated during construction and operation of future development under the Proposed Project.

Construction Emissions

Emissions from the construction phase of the Proposed Project were estimated using CalEEMod Version 2016.3.2. Construction scenario assumptions, including phasing, equipment mix, and vehicle trips, were based on CalEEMod default values, which were adjusted to more accurately reflect long-term buildout of the Proposed Project.

For purposes of estimating Proposed Project emissions, construction is assumed to start in 2020 and have a duration of 20 years, reaching completion in 2040. While construction specifics for buildout of the Proposed Project are not currently available, the analysis contained herein is based on the first full year of construction (2020), which is the estimated worst-case construction year because equipment and vehicle emission factors for later years would be slightly less due to more stringent standards for in-use off-road equipment and heavy-duty trucks, as well as fleet turnover replacing older equipment and vehicles in later years. To estimate a single year of construction, the entire Proposed Project buildout land use quantities was scaled by 20-years of construction (i.e., 5% of total buildout) and then compressed to a 1-year period. CalEEMod default values for buildout of 5% of the Proposed Project was estimated to take a little less than 2 years; therefore, corresponding construction equipment were multiplied by a factor of 2 to account for the compressed 1-year period (i.e., reducing schedule by half and increasing intensity by doubling equipment). Building construction and architectural coating worker and vendor trips were similarly multiplied by 2; all other construction phase worker trips were based on the number of equipment and CalEEMod default assumptions of 1.25 workers per piece of equipment. CalEEMod default trip length values were used for the distances for all construction-related trips.

The resulting 1-year construction assumptions are provided for each year of construction (duration of phases is approximate):

- Demolition: 11 days
- Site Preparation: 5 days
- Grading: 19 days

- Building Construction: 203 days
- Paving: 11 days
- Application of Architectural Coatings: 11 days

While not all of the existing buildings would be demolished and replaced, it was conservatively assumed that all 3,503,616 square feet of existing structures would be demolished over the 20-year buildout. Accordingly, it was assumed that 175,181 square feet (3,503,616 square feet ÷ 20 years) would be demolished during the demolition phase for the 1-year construction scenario. Grading quantities are currently not identified and grading is anticipated to be minimal because the site is already developed; however, to capture potential haul truck trips during the grading phase, it was assumed that 10,000 cubic yards would be exported during the grading phase for the 1-year construction scenario. To capture emissions associated with the asphalt surfaces (e.g., streets and parking lots) it was assumed that 20% of total GCSP acreage was paved. While only one phase of each type of construction activity is included in the model run, it is anticipated that this model scenario would include construction activity at more than one site within the Proposed Project area. Not all development under the Proposed Project would require all of the construction phases assumed; however, the above-listed six default CalEEMod construction phases were included to present the potential range of emissions and capture a maximum daily scenario. For example, due to the developed nature of the Plan Area, many projects may only require a demolition (existing buildings and asphalt pavement) and minor site preparation phase prior to building construction, while some projects may require renovation, which would be less intensive than reconstruction.

The construction equipment mix and vehicle trips used for estimating the Proposed Project-generated construction emissions are shown in Table 3.2-7, Construction Scenario Assumptions. For the analysis, it was assumed that heavy construction equipment would be operating at the site 5 days per week (22 days per month) during Proposed Project construction.[9]

Table 3.2-7
Construction Scenario Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	*Average Daily Vendor Truck Trips*	*Total Haul Truck Trips*	*Equipment Type*	*Quantity*	*Usage Hours*
Demolition	30	0	798	Concrete/industrial saws	2	8
				Excavators	6	8
				Rubber-tired dozers	4	8

[9] As shown in Table 3.2-7, most equipment was assumed to operate for 8 hours per day. In reality, it is anticipated that equipment would be used for less than 8 hours a day when considering mandated worker breaks and that equipment would only be operated when needed; in addition, it is anticipated that the construction areas are cannot allow every piece of equipment to be in operation at the same time. Therefore, the equipment usage hours is anticipated to be conservative.

Table 3.2-7
Construction Scenario Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	*Average Daily Vendor Truck Trips*	*Total Haul Truck Trips*	*Equipment Type*	*Quantity*	*Usage Hours*
Site Preparation	36	0	0	Rubber-tired dozers	6	8
				Tractors/loaders/backhoes	8	8
Grading	40	0	1,250	Excavators	4	8
				Graders	2	8
				Rubber-tired dozers	2	8
				Scrapers	4	8
				Tractors/loaders/backhoes	4	8
Building construction	446	92	0	Cranes	2	7
				Forklifts	6	8
				Generator sets	2	8
				Tractors/loaders/backhoes	6	7
				Welders	2	8
Paving	30	0	0	Pavers	4	8
				Paving equipment	4	8
				Rollers	4	8
Architectural coating	90	0	0	Air compressors	2	6

Notes: See Appendix B-1, Emission Calculations for details.

Operational Emissions

Emissions from the operational phase of the Proposed Project were estimated using CalEEMod Version 2016.3.2. Operational year 2040 was assumed consistent with the traffic impact analysis (TIA) (LLG 2020) prepared for the Proposed Project (Appendix D, Traffic Impact Analysis). Per the TIA, the Proposed Project development scenario would include a mix of commercial, retail, and industrial land uses totaling 7,011,195 square feet.

Emissions from the existing land uses (Existing Scenario) were also estimated using CalEEMod to present the net change in criteria air pollutant emissions. Operational year 2018 was assumed for the Existing Scenario. A large portion of the existing uses (1,409,441 square feet, approximately 40% of 3,503,616 square feet of existing land use) is currently vacant, which was formerly occupied by Boeing. The total existing land use within the Plan Area that is currently occupied and therefore, evaluated in the Existing Scenario, is approximately 2,094,175 square feet.

The Proposed Project and Existing Scenario land use assumptions in CalEEMod were based on the TIA (Appendix D), and are presented in Table 3.2-8, Proposed Project and Existing Scenario Development Land Use Summary.

Table 3.2-8
Proposed Project and Existing Scenario Development Land Use Summary

Land Use	Proposed Project	Existing Scenario
	Square Feet	
Animal Hospital Veterinary Clinic	0	3,280
Automated Car Wash	0	5,435
Automobile Care Center	0	15,114
Automobile Parts Sales	0	36,824
Automobile Parts and Service Center	0	122,812
Automobile Sales New	0	1,993
Automobile Sales Used	0	1,758
Construction Equipment Rental Store	0	23,049
Drive in Bank	0	4,507
Fast Casual Restaurant	33,524	0
Fast-Food Restaurant with Drive Through Window	11,177	0
General Office Building	1,770,539	136,662
High Cube Cold Storage Warehouse	468,112	0
High Turnover Sit Down Restaurant	37,015	19,372
Hotel	162,943 (332 rooms)	0
Manufacturing	1,046,952	758,116
Medical Dental Office Building	127,992	14,823
Mini Warehouse		259,667
Quality Restaurant	7,636	0
Recreational Community Center		14,683
Research and Development Center	234,650	0
Shopping Center	458,015	30,041
Warehousing	2,652,640	546,039
Total	**7,011,195**	**2,094,175**

Source: Appendix D, Traffic Impact Analysis (June 30, 2020).
Notes: For the Existing Scenario, the square footage total reported excludes 1,409,441 square feet of existing vacant industrial uses located within traffic analysis zone 9 (Boeing Site).
Total may not sum due to rounding.

The net change in total square footage from the Proposed Project and the Existing Scenario is approximately 4,917,020 square feet.

Area Sources

CalEEMod was used to estimate operational emissions from area sources, including emissions from consumer product use, architectural coatings, and landscape maintenance equipment. Emissions associated with natural gas usage in space heating, water heating, and stoves are calculated in the building energy use module of CalEEMod, as described in the following text. The

Proposed Project and Existing Scenario are assumed to not include woodstoves or fireplaces (wood or natural gas). As such, area source emissions associated with hearths were not included.

Consumer products are chemically formulated products used by household and institutional consumers, including detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. Other paint products, furniture coatings, or architectural coatings are not considered consumer products (California Air Pollution Control Officers Association (CAPCOA) 2017). Consumer product VOC emissions are estimated in CalEEMod based on the floor area of nonresidential buildings and on the default factor of pounds of VOC per building square foot per day. For the asphalt surface land use assumed in the Proposed Project scenario, CalEEMod estimates VOC emissions associated with use of parking surface degreasers based on a square footage of parking surface area and pounds of VOC per square foot per day.

VOC off-gassing emissions result from evaporation of solvents contained in surface coatings such as in paints and primers using during building maintenance. CalEEMod calculates the VOC evaporative emissions from application of nonresidential surface coatings based on the VOC emission factor, the building square footage, the assumed fraction of surface area, and the reapplication rate. The VOC emission factor is based on the VOC content of the surface coatings, and SCAQMD's Rule 1113 (Architectural Coatings) governs the VOC content for interior and exterior coatings. The model default reapplication rate of 10% of area per year is assumed. Consistent with CalEEMod defaults, it is assumed that the nonresidential surface area for painting equals 2.0 times the floor square footage, with 75% assumed for interior coating and 25% assumed for exterior surface coating. For the other asphalt surfaces assumed in the Proposed Project scenario, the architectural coating area is assumed to be 6% of the total square footage, consistent with the supporting CalEEMod studies provided as an appendix to the CalEEMod User's Guide (CAPCOA 2017).

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers. The emissions associated from landscape equipment use are estimated based on CalEEMod default values for emission factors (grams per residential dwelling unit per day and grams per square foot of nonresidential building space per day) and number of summer days (when landscape maintenance would generally be performed) and winter days.

Energy Sources

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

The energy use from nonresidential land uses (natural gas usage per square foot per year) is calculated in CalEEMod based on the California Commercial End-Use Survey database. The current version of CalEEMod assumes compliance with the 2016 Title 24 Building Energy Efficiency Standards (CAPCOA 2017); however, the Proposed Project would be required to comply with the 2019 Title 24 Standards at a minimum. Per the CEC Impact Analysis for the 2019 Update to the California Energy Efficiency Standards for Residential and Non-Residential Buildings, the first-year savings for newly constructed nonresidential buildings are 197 gigawatt hours of electricity, 76.6 megawatt of demand, and 0.27 million therms of gas, representing reductions from the 2016 Title 24 standard of 10.7%, 9%, and 1%, respectively (CEC 2018a). To take into account energy reductions associated with compliance with 2019 Title 24, the CalEEMod Title 24 natural gas values were reduced by 1%, for all Proposed Project buildings. The applied reductions are anticipated to be conservative as in general, nonresidential buildings built to the 2019 standards are anticipated to use an estimated 30% less energy than those built to the 2016 standards (CEC 2018b).

Mobile Sources

Mobile sources for the Proposed Project would primarily be motor vehicles (passenger vehicles and heavy-duty trucks[10]) traveling to and from the Plan Area, which is the same for the Existing Scenario. Emissions from the mobile sources during operation of the Proposed Project and Existing Scenario were estimated using a spreadsheet-based model and emission factors from the CARB EMFAC2017 and EPA AP-42 factors for paved road dust generation. Vehicle trip lengths were assumed to be 20.4 miles for truck trips and the passenger car trip length was assumed to be 6.95 miles for the Proposed Project (LSA 2020).[11] VMT was not estimated for the Existing Scenario; however, because the Proposed Project and Existing Scenario mix of land uses are similar, it is reasonable to assume that the trip length estimated for the Proposed Project would also be reasonable to apply to the Existing Scenario. As such, an average trip length of 20.4 miles for truck trips and 6.95 miles for passenger car trips was assumed for the Existing Scenario.

Based on the TIA (Appendix D), the Proposed Project would generate a total of 59,437 trips; 54,107 trips would be passenger vehicle (91%) and 5,330 trips would be heavy-duty trucks (9%).

[10] "Heavy-duty trucks" include light-heavy-duty trucks (categories 1 and 2 in EMFAC, 2-axle), medium-heavy-duty trucks (3-axle), and heavy-heavy-duty trucks (4+-axle).

[11] The passenger vehicle trip length is based on the VMT analysis prepared for the Proposed Project, which assumed an average VMT per employee of 13.9 miles, which represents a round trip (13.9 miles ÷ 2 one-way trips = 6.95 miles per one-way trip) (LSA 2020). The truck one-way trip length of 20.4 miles was based on the SCAG travel model (pers. comm. Mukherjee, 2020). The SCAG travel model includes a fairly sophisticated heavy-duty truck sub model, which includes various components such as truck trip generation based on different employment categories, port truck model, intermodal facilities etc. that generate and distribute truck trips. The output truck trip table along with distance based truck skims (truck trip lengths) are used to estimate truck VMT. Truck VMT and truck trips for the project zone are used to estimate a weighted average trip length (average trip length = truck VMT ÷ truck trips) for truck trips (pers. comm. Mukherjee, 2020).

Total daily VMT for the Proposed Project is estimated to be 484,776. The Existing Scenario would generate a total of 18,138 trips; 15,627 trips would be passenger vehicle (86%) and 2,511 trips would be heavy-duty trucks (14%). Total daily VMT for the Existing Scenario is estimated to be 159,832. To estimate annual emissions, daily activity was multiple by 365 days per year. While the 365 days per year operating scenario is appropriate for industrial and retail land uses, it is conservative to apply to commercial land uses that have a reduction in activity on the weekends. Annually, the Proposed Project is estimated to generate 21,694,505 trips and 176,943,112 VMT per year. The Existing Scenario is estimated to generate 6,620,370 trips and 58,338,698 VMT annually. Note that the VMT analysis prepared for the Proposed Project (LSA 2020) uses a VMT per employee metric and employee vehicles are assumed to be passenger vehicles (light-duty vehicles). However, the air quality (and GHG emissions) analysis includes emissions from all vehicles traveling to and from the Plan Area, including passenger vehicles, heavy-duty trucks, and other vehicle categories included in EMFAC2017 for the region. Therefore, the Proposed Project and Existing Scenario VMT estimates for the air quality (and GHG emissions) analysis are specifically developed for emission estimation purposes. Nonetheless, the employee VMT estimate assumed for emission estimation purposes is consistent with the Proposed Project VMT analysis (i.e., 6.95 miles per one-way trip).

Vehicle emissions occur during startup, operation (running), and idling, as well as from evaporative losses when the engines are resting. The emissions factors for trucks and passenger vehicles were determined using EMFAC2017, which generates emissions factors, expressed in grams per mile, grams per trip, and grams per vehicle per day, for the fleet in a class of motor vehicles within a region for a particular study year. For this analysis, SCAQMD was selected for the region and calendar year 2040 and 2018 were selected in EMFAC to represent the Proposed Project and Existing Scenario operational start years, respectively.

A composite, or weighted-average, emissions factor was developed for project vehicle types if more than one vehicle category in EMFAC is anticipated to be representative of the project vehicle. The composite emission factors are weighted by VMT, population, or trips depending on the emissions process, which is the physical mechanism that results in the emissions of a pollutant. The trips by vehicle type were provided by the TIA (Appendix D) and 4-axle trucks were assumed to be heavy-duty trucks, 3-axle trucks were assumed to be medium-heavy-duty trucks, and 2-axle trucks were assumed to be of light-heavy-duty trucks. For the passenger vehicles, the composite emission factor represents the weighted average emission rate for passenger vehicles, light-duty trucks, motorcycles, motor homes, buses. All trucks and passenger vehicles were assumed to be a composite mix of gasoline, diesel-fueled, natural gas, and electric consistent with the default EMFAC vehicle mix.

Truck idling would be limited to 5 minutes in accordance with CARB's adopted Airborne Toxic Control Measure; however, for modeling purposes, it was conservatively assumed that

the heavy-duty trucks would idle for a total of 15 minutes; entering the site, at the loading dock, and prior to exiting site. Transport refrigeration unit (TRU) emissions were included in the emission inventory, but discussed under Off-road Equipment, Stationary Sources, and Other Sources of Emissions, below.

Off-road Equipment, Stationary Sources, and Other Sources of Emissions

Based on the type of land uses that would be developed under the GCSP, there are additional emission sources that are either not captured in CalEEMod or specifics are not available to accurately estimate emissions using CalEEMod. Potential additional sources of criteria air pollutant and TAC emissions include: emergency generators, boilers, broilers (meat cooking), ovens, cogeneration facilities, chillers, cooling towers, autoclave, metals production, painting and spray booths, off-road equipment (e.g., forklifts), truck idling, TRUs, and various VOC sources. In addition, emissions from the stationary and mobile sources listed above are also anticipated to occur under the Existing Scenario based on the existing land use.

For most of these sources, because specifics are not available to accurately estimate emissions from these anticipated sources under the Proposed Project and Existing Scenario, associated emissions are not included in the estimated emissions presented herein. However, in a good faith effort to include sources typically associated with warehouse/industrial land uses (i.e., warehousing, high cube cold storage warehouse, and manufacturing), forklifts, yard trucks, emergency generators, and TRUs are included in the Proposed Project's emission inventory. For the Existing Scenario, emissions from forklifts and yard trucks associated with the warehouse/industrial land uses (i.e., warehousing, mini warehouse, and manufacturing) are included in the emission inventory. Methods and assumptions to estimate these sources of emissions are discussed below. Note that all stationary sources developed under the GCSP would be required to comply with applicable SCAQMD rules and regulations, and would be required to obtain a permit to operate from the SCAQMD.

Forklifts

The SCAQMD published a high cube warehouse truck trip study white paper summary of business survey results, which summarizes various operational results from 34 operating high cube warehouses ("SCAQMD Survey", SCAQMD 2014). The SCAQMD Survey reported an average of 0.12 forklifts/pallet jacks per 1,000 square feet of building area, which was applied to both the Proposed Project and Existing Scenario. Note that this estimate if for total forklifts and pallet jacks while pallet jacks are small as they are primarily used to lift small loads in tight quarters (and are electric or manual); therefore, assuming all pieces of equipment are forklifts is conservative. While manufacturing includes a different operation that warehousing, because there is no factor available for manufacturing, the high cube warehouse factor of 0.12 forklifts/pallet jacks per 1,000 square feet of building area was applied. For the Proposed Project, a total of 500 forklifts were assumed, and for the Existing Scenario a total of

188 forklifts were assumed. All indoor forklifts are anticipated to be electric-powered and while the majority of forklifts are anticipated to be used indoors, to conservatively capture the potential for outdoor forklift usage that may be diesel-fueled, 75% of the forklifts were assumed to be electric and 25% were assumed to be diesel. The indoor forklifts were modeled as 89-horsepower electric forklifts that would operate at 8 hours per day, 365 days per year. The outdoor forklifts were modeled as 100-horsepower diesel rough terrain forklifts that would operate at 8 hours per day, 365 days per year. CalEEMod was used to estimate emissions from forklifts.

Yard Trucks

Industrial warehouse building operation may require cargo handling equipment to move empty containers and empty chassis to and from the various pieces of cargo handling equipment that receive and distribute containers, which is commonly done by yard trucks. Yard trucks, which are also called yard goats, utility tractors, hustlers, yard hostlers, and yard tractors, were reported at the majority of the 34 high cube warehouses in the SCAQMD Survey with an average usage of 3.6 hostlers per million square feet of building area. The 3.6 hostlers per million square feet of building area was applied to the Proposed Project and Existing Scenario – both warehouse and manufacturing land uses – with the Proposed Project totaling 16 yard trucks and the Existing Scenario totaling 6 yard trucks. All yard trucks were assumed to be diesel-powered, 200 horsepower, and would operate for 8 hours per day, 365 days per year. CalEEMod was used to estimate emissions from yard trucks.

Emergency Generators

Emergency, or stand-by, generators are anticipated to be required for the high cube cold storage warehouse land uses to ensure that product stays cold in the event of a power outage. While use of generators during an emergency is not included in the emissions inventory as they are speculative, emissions associated with testing and maintenance of the generators is included. No industry standard factor is available, so one generator per 100,000 square feet of cold storage warehouse was assumed to capture at least one generator associated with a small warehouse building. Accordingly, for the Proposed Project, 5 generators were assumed associated with cold storage warehouse space and an additional 5 generators were assumed to account for other potential generator use within the GCSP. All generators were assumed to be diesel-fueled, meet Tier 4 Final engine emission regulatory standards, would be tested for 1 hour per day and 50 hours per year, and would be 500 horsepower based on a review of existing permits for warehouses within the SCAQMD jurisdiction and SCAQMD Rule 1470.[12] CalEEMod was used to estimate emissions from emergency generator testing and maintenance. While emergency generators may be operating within the Plan Area, it was

[12] Per SCAQMD Rule 1470 (Requirement for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines), new stationary emergency standby diesel-fueled engines (greater than 50 brake horsepower) shall not operate more than 50 hours per year for maintenance and testing.

conservatively assumed that no emergency generators and associated emissions would occur under the Existing Scenario.

Transport Refrigeration Units

TRUs are designed to maintain the temperature inside delivery truck trailers and are anticipated to be associated with the high cube cold storage warehouse land uses. For the Proposed Project, it was conservatively assumed that 100% of all cold storage warehouse 3-axle and 4-axle truck trips would include a TRU that would be diesel-powered and 25-horsepower. Because the availability of electric plug-ins at each loading dock cannot be confirmed, it was assumed that TRUs would operate on site for 60 minutes (1 hour) per visit. On-site emissions from TRUs was estimated based on OFFROAD2017 emission inventory for instate TRUs for calendar year 2040. Because the Existing Scenario land uses do not include cold storage, no TRUs were assumed to be associated with the Existing Scenario.

3.2.4 Impacts Analysis

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

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

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

Consistency Criterion No. 1

Section 3.2.4, Threshold B, evaluates the Proposed Project's potential impacts with regards to State CEQA Guidelines Appendix G Threshold 2 (a project's potential to result in a cumulatively considerable net increase of any nonattainment criteria pollutant). As discussed in below, the Proposed Project would result exceed the SCAQMD construction thresholds for VOC and NOx and the SCAQMD operational thresholds for CO, VOC, and

PM_{10}, and VOC and PM_{10} are nonattainment pollutants under the NAAQS and/or CAAQS (VOC as a precursor to O_3, which is the nonattainment pollutant). Because the Proposed Project would result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, the Proposed Project would potentially conflict with Consistency Criterion No. 1 of the SCAQMD CEQA Air Quality Handbook.

Consistency Criterion No. 2

While striving to achieve the NAAQS for O_3 and $PM_{2.5}$ and the CAAQS for O_3, PM_{10}, and $PM_{2.5}$ through a variety of air quality control measures, the 2016 AQMP also accommodates planned growth in the SCAB. Projects are considered consistent with, and would not conflict with or obstruct implementation of, the AQMP if the growth in socioeconomic factors (e.g., population, employment) is consistent with the underlying regional plans used to develop the AQMP (per Consistency Criterion No. 2 of the SCAQMD CEQA Air Quality Handbook).

The SCAQMD primarily uses demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by the SCAG for its RTP/SCS (SCAG 2016), which is based on general plans for cities and counties in the SCAB, for the development of the AQMP emissions inventory (SCAQMD 2017).[13] The SCAG 2016 RTP/SCS, and associated Regional Growth Forecast, are generally consistent with the local plans; therefore, the SCAQMD 2016 AQMP is generally consistent with local government plans. While SCAG has adopted their 2020 RTP/SCS for federal transportation conformity purposes, the SCAQMD 2016 AQMP is based on the SCAG 2016 RTP/SCS; therefore, the SCAG 2016 RTP/SCS is the appropriate document for comparison. Nonetheless, the evaluation criteria for consistency between a project and a RTP/SCS is consistency with land use designations; therefore, the analysis of the Proposed Project consistency with the SCAG 2016 RTP/SCS and the SCAG 2020 RTP/SCS is the same.

At the time of publication of the NOP, the 1989 General Plan was in effect and identified the majority of the Plan Area as 9G (General Industry). The area east of the former Boeing C-17 Site, adjacent to the airport, is designated 12 (Harbor/Airport), which requires special planning documents (i.e., an Airport Layout Plan) to govern land use development. The

[13] Information necessary to produce the emission inventory for the SCAB is obtained from the SCAQMD and other governmental agencies, including CARB, Caltrans, and SCAG. Each of these agencies is responsible for collecting data (e.g., industry growth factors, socio-economic projections, travel activity levels, emission factors, emission speciation profile, and emissions) and developing methodologies (e.g., model and demographic forecast improvements) required to generate a comprehensive emissions inventory. SCAG incorporates these data into their Travel Demand Model for estimating/projecting vehicle miles traveled and driving speeds. SCAG's socio-economic and transportation activities projections in their 2016 RTP/SCS are integrated in the 2016 AQMP (SCAQMD 2017).

northern portion to the east of Cherry Avenue is designated as 9R (Restricted Industry) and 8A (Traditional Retail Strip Commercial). South of the I-405 freeway, the Plan Area is designated 9R (Restricted Industry) and 7 (Mixed-Uses) to the east; and 9G (General Industry), 8A (Traditional Retail Strip Commercial), and 11 (Open Space/Parks) to the west (City of Long Beach 1989).

On December 3, 2019, the City Council adopted a resolution adopting the updated Land Use Element to the Long Beach General Plan, replacing the existing Land Use Element comprised of policies and the adopted General Plan Land Use Designation maps, with the updated Land Use Element, including revised policies and the PlaceType and Height maps. The City currently envisions maintaining the Cherry Avenue Corridor for community commercial uses. The C-17 Site and adjacent area to the east near the airport are designated RSF (Regional-Serving Facilities). The northern portion of the Plan Area east of Cherry Avenue is designated CC (Community Commercial). South of the I-405 freeway, the Plan Area is CC (Community Commercial), I (Industrial), NI (Neo Industrial), and OS (Open Space) (City of Long Beach 2019).

The C-17 Site is located within the Planned Development 19 (PD-19) zoning area. The Cherry Avenue Corridor area is located in the IG (General Industrial) zone, as is the portion of the Plan Area north of Wardlow Road. The northern portion of the Plan Area to the east of Cherry Avenue is designated as IG (General Industrial) and CCA (Commercial). South of I-405 the Plan Area is designated IG (General Industrial), CCA (Commercial), P (Park), and I (Institutional). In order to construct the Proposed Project, approval of a Zoning Code Amendment from the City is required, which would change the designation to GCSP.

As discussed in Section 3.9, Population and Housing, of this Draft PEIR/PEIS, the GCSP does not include any zoning for residential land uses that could directly induce population growth. While the GCSP does not include plans for residentially zoned areas, which could directly induce population growth, the GCSP does have the potential to induce growth through the increase in the number of jobs available within the Plan Area. While the GCSP could increase the number of jobs available relative to the number of jobs that are currently available, increase in employment during construction and operation are not expected to cause people to move into the City or the County from areas outside the City or County. In addition, the proposed GCSP land use districts are consistent with the City's 2019 Draft General Plan Land Use Element.

While the GCSP is a planning document and does not include any physical improvements or projects at this time, future development facilitated by approval of this plan would create a number of temporary, construction related jobs, as well as, permanent jobs associated with the new developments. The City of Long Beach is expected to have a jobs-to-housing

ratio of 1.04 by 2040, which is lower than Los Angeles County and the SCAG region by 0.28 and 0.27, respectively (City of Long Beach 2017, see Table 3.9-3). This means that the City is considered to be "jobs poor," indicating that many of the residents must commute to places of employment outside of the City. While it is uncertain where future place of residence would be for employees working within the Plan Area, due to the City's projected jobs-to-housing ratio (1.04 by 2040), it is reasonable to assume that a large percentage of these jobs would be filled by persons already living within the City. Therefore, a substantial increase in population as a result of future employment opportunities potentially facilitated by the GCSP is not anticipated.

In addition, due to the significant job loss that resulted in the area from closure of the C-17 Site, which is evident by the number of manufacturing jobs lost from 2010 to 2016, the new jobs created by the GCSP would likely be replacing those that were lost in the area due to closure of the C-17 site. A principal goal of the GCSP is to stimulate economic growth and attract businesses that replenish high-quality jobs lost from the closure of the former Boeing C-17 manufacturing plant.

Furthermore, although the GCSP would allow for new employment opportunities in the City of Long Beach through the year 2040, it would be consistent with SCAG's regional growth forecasts for employment in the same horizon year (See Section 3.9, Population and Housing, of this Draft PEIR/PEIS). Thus, the Proposed Project would not foster growth in excess of what was assumed in projections made by regional planning agencies (e.g., SCAG) for the City as a whole. Therefore, implementation of the GCSP would not result in direct or indirect substantial population growth.

Based on these considerations, vehicle trip generation and planned development for the site are concluded to have been anticipated in the SCAG growth projections and implementation of the Proposed Project would not result in a conflict with, or obstruct implementation of, the applicable air quality plan (i.e., SCAQMD 2016 AQMP). Accordingly, the Proposed Project would meet Consistency Criterion No. 2 of the SCAQMD CEQA Air Quality Handbook.

Summary

CEQA Impact Determination

As described previously, the Proposed Project would potentially result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, and would potentially conflict with Consistency Criterion No. 1. Implementation of the Proposed Project would not exceed the demographic growth forecasts in the SCAG 2016 RTP/SCS; therefore, the Proposed Project would be consistent

with the SCAQMD 2016 AQMP, which based future emission estimates on the SCAG 2016 RTP/SCS. Thus, the Proposed Project would not conflict with Consistency Criterion No. 2. However, because the Proposed Project would potentially conflict with Consistency Criterion No. 1, impacts related to the Proposed Project's potential to conflict with or obstruct implementation of the applicable air quality plan is considered potentially significant and mitigation is required. Mitigation measures **MM-AQ-1** (Construction Equipment Emissions Reductions), **MM-AQ-2** (Fugitive Dust Control),[14] and **MM-AQ-3** (Architectural Coating VOC Emissions) would be required to reduce Proposed Project construction-related emissions and **MM-AQ-4** (Vehicle Miles Traveled Reduction Strategies), **MM-AQ-5** (Encourage Electric Vehicles), **MM-AQ-6** (Idling Restriction), **MM-AQ-7** (Energy Conservation), **MM-AQ-8** (Low-VOC-Green Cleaning Product Education Program), **MM-AQ-9** (Electric Forklifts), and **MM-AQ-10** (TRU Plug-Ins) would be required to reduce emissions generated during operation of the Proposed Project. Mitigation measure **MM-AQ-1** would reduce various air pollutant emissions associated with construction equipment operation. Mitigation measure **MM-AQ-2** would reduce dust-related PM_{10} and $PM_{2.5}$ emissions generated during construction and mitigation measure **MM-AQ-3** would reduce VOC emissions generated the application of architectural coating during construction. Mitigation measures **MM-AQ-4**, **MM-AQ-5**, and **MM-AQ-6** aim to reduce operational mobile source emissions of various air pollutants. Mitigation measure **MM-AQ-7** focuses on reducing energy-related operational emissions and mitigation measure **MM-AQ-8** encourages reduction of operational area source VOC emissions. Mitigation measure **MM-AQ-9** would reduce criteria air pollutants by replacing diesel-fueled forklifts with electric forklifts and mitigation measure **MM-AQ-10** would reduce criteria air pollutants generated by TRU idling. Nonetheless, even with the implementation of mitigation, due to the magnitude of emissions associated with buildout of the Proposed Project, potential impacts would remain **significant and unavoidable** under CEQA.

NEPA Impact Determination

In summary, under NEPA, effects associated with the Proposed Project potentially resulting in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, and would potentially conflict with Consistency Criterion No. 1. Implementation of the Proposed Project would be not exceed the demographic growth forecasts in the SCAG 2016 RTP/SCS; therefore, the Proposed Project would be consistent with the SCAQMD 2016 AQMP, which based future emission estimates on the SCAG 2016 RTP/SCS. Thus, the Proposed Project would not conflict with Consistency Criterion No. 2. However, because the Proposed Project would potentially conflict with Consistency Criterion No. 1, effects related to the Proposed Project's potential

[14] Even though estimated Proposed Project mass daily emissions do not exceed the $PM_{10,}$ and $PM_{2.5}$.

to conflict with or obstruct implementation of the applicable air quality plan is considered potentially significant and adverse. Mitigation measures **MM-AQ-1** (Construction Equipment Emissions Reductions), **MM-AQ-2** (Fugitive Dust Control), and **MM-AQ-3** (Architectural Coating VOC Emissions) would be required to reduce Proposed Project construction-related emissions and **MM-AQ-4** (Vehicle Miles Traveled Reduction Strategies), **MM-AQ-5** (Encourage Electric Vehicles), **MM-AQ-6** (Idling Restriction), **MM-AQ-7** (Energy Conservation), **MM-AQ-8** (Low-VOC-Green Cleaning Product Education Program), **MM-AQ-9** (Electric Forklifts), and **MM-AQ-10** (TRU Plug-Ins) would be required to reduce emissions generated during operation of the Proposed Project. Mitigation measure **MM-AQ-1** would reduce various air pollutant emissions associated with construction equipment operation. Mitigation measure **MM-AQ-2** would reduce dust-related PM_{10} and $PM_{2.5}$ emissions generated during construction and mitigation measure **MM-AQ-3** would reduce VOC emissions generated the application of architectural coating during construction. Mitigation measures **MM-AQ-4**, **MM-AQ-5**, and **MM-AQ-6** aim to reduce operational mobile source emissions of various air pollutants. Mitigation measure **MM-AQ-7** focuses on reducing energy-related operational emissions and mitigation measure **MM-AQ-8** encourages reduction of operational area source VOC emissions. Mitigation measure **MM-AQ-9** would reduce criteria air pollutants by replacing diesel-fueled forklifts with electric forklifts and mitigation measure **MM-AQ-10** would reduce criteria air pollutants generated by TRU idling. Nonetheless, even with the implementation of mitigation, due to the magnitude of emissions associated with buildout of the Proposed Project, potential effects would remain **adverse** under NEPA.

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.

Past, present, and future development projects may contribute to the SCAB adverse air quality impacts on a cumulative basis. By its nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and the SCAQMD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level thresholds of significance for criteria pollutants are used in the determination of whether a project's individual emissions would have a cumulatively considerable contribution on air quality. If a project's emissions would exceed the SCAQMD significance thresholds, it would be considered to have a cumulatively considerable contribution. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant (SCAQMD 2003a).

Construction and operation of the Proposed Project would result in emissions of criteria air pollutants from mobile, area, energy and/or stationary sources, which may result in a cumulatively considerable net increase in emissions of criteria air pollutants for which the SCAB is designated as nonattainment under the NAAQS or CAAQS. The following discussion identifies potential short-term construction and long-term operational impacts that would result from implementation of the Proposed Project.

Construction Emissions

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

As discussed in Section 3.2.3.2, Approach and Methodology (Construction), criteria air pollutant emissions associated with temporary construction activity were quantified using CalEEMod. Construction emissions were calculated for the estimated worst-case day over year one of Proposed Project construction (2020) and associated with each phase and reported as the maximum daily emissions estimated in 2020. Construction schedule assumptions, including phase type, duration, and sequencing, were based on CalEEMod default values that were then scaled down into a 1-year period and intensity was doubled to account for the condensed schedule. Overall, construction scenario assumptions are intended to represent a reasonable scenario in the absence of Proposed Project-specific information.

Implementation of the Proposed Project would generate criteria air pollutant emissions from entrained dust, off-road equipment, vehicle emissions, architectural coatings, and asphalt pavement application. Entrained dust results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil, resulting in PM_{10} and $PM_{2.5}$ emissions. The Proposed Project would be required to comply with SCAQMD Rule 403 to control dust emissions generated during the grading activities. Standard construction practices that were assumed to be employed to reduce fugitive dust emissions, and were quantified in CalEEMod, include watering of the active sites two times per day depending on weather conditions. Internal combustion engines used by construction equipment, vendor trucks (i.e., delivery trucks), and worker vehicles would result in emissions of VOCs, NO_x, CO, PM_{10}, and $PM_{2.5}$. The application of architectural coatings, such as exterior application/interior paint and other finishes, and application of asphalt pavement would also produce VOC emissions; however, the contractor is required to procure

architectural coatings from a supplier in compliance with the requirements of SCAQMD's Rule 1113 (Architectural Coatings).

Table 3.2-9, Estimated Maximum Daily Construction (On-Site and Off-Site) Criteria Air Pollutant Emissions by Phase – Unmitigated, presents the estimated maximum daily construction emissions generated during construction of the Proposed Project in year 1 (2020) and presented by phase. If multiple large construction projects within the Proposed Project area occur simultaneously, it is possible that cumulative impacts associated with air quality violations could occur. To present a conservative scenario of potential emissions associated with multiple construction projects occurring at the same time, the maximum daily emissions during the six analyzed construction phases (i.e., demolition, site preparation, grading, building construction, paving, and architectural coating) of Proposed Project construction are presented below. The values shown are the maximum summer or winter daily emissions results from CalEEMod. Details of the emission calculations are provided in Appendix B-1, Emission Calculations.

Table 3.2-9
Estimated Maximum Daily Construction (On-Site and Off-Site) Criteria Air Pollutant Emissions by Phase - Unmitigated

Phase	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	pounds per day					
Demolition	7.34	86.50	48.84	0.14	33.39	6.78
Site Preparation	8.33	84.95	44.35	0.08	21.06	13.09
Grading	9.61	118.66	69.22	0.18	33.19	9.66
Building Construction	6.76	49.50	52.68	0.12	26.57	5.54
Paving	4.01	28.23	30.41	0.06	1.84	1.48
Architectural Coating	301.68	3.67	6.98	0.02	1.24	0.50
Maximum Daily Emissions From Phases Separately	**301.68**	**118.66**	**69.22**	**0.18**	**33.39**	**13.09**
Maximum Daily Emissions Assuming Concurrent Phase Construction	**337.73**	**371.51**	**252.48**	**0.59**	**117.29**	**37.04**
SCAQMD Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**Yes**	**Yes**	No	No	No	No

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District.
See Appendix B-1, Emission Calculations, for complete results.
The values shown are the maximum summer or winter daily emissions results from CalEEMod.
These estimates implementation of the Proposed Project's fugitive dust control strategies, including watering of an active site two times per day.

Because construction specifications are not currently available, under a conservative scenario where maximum emissions from each assessed construction phase would occur concurrently, estimated Proposed Project emissions would exceed the SCAQMD thresholds for VOC and NO_x. Emissions of CO, SO_x, PM_{10}, and $PM_{2.5}$ are not estimated to exceed SCAQMD thresholds. The implementation of mitigation measures **MM-AQ-1** through **MM-AQ-3** would be required to reduce Proposed Project construction-related emissions. As described previously, mitigation measure **MM-AQ-1** would reduce various air pollutant emissions associated with construction equipment operation, mitigation measure **MM-AQ-2** would reduce dust-related PM_{10} and $PM_{2.5}$ emissions generated during construction, and mitigation measure **MM-AQ-3** would reduce VOC emissions generated the application of architectural coating during construction. Nonetheless, even with the implementation of mitigation, Proposed Project-generated construction criteria air pollutant emissions would remain **significant and unavoidable**.

Operational Emissions

Operation of the Proposed Project would generate VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions from mobile sources, including vehicle trips; area sources, including the use of consumer products, architectural coatings for repainting, and landscape maintenance equipment; and energy sources, including combustion of fuels used for space and water heating. As discussed in Section 3.2.3.2, Approach and Methodology (Operational Emissions), pollutant emissions associated with long-term operation of the Proposed Project and the Existing Scenario were quantified using CalEEMod (area, energy, off-road equipment, and stationary sources) and EMFAC2017 (mobile sources and TRU).

Table 3.2-10, Estimated Maximum Daily Operational Criteria Air Pollutant Emissions – Unmitigated, presents the net change maximum daily area, energy, mobile, and other source emissions associated with operation of the Proposed Project in 2040 and operation under the Existing Scenario in 2018, and the estimated net change in emissions (Proposed Project minus the Existing Scenario). The values shown are the maximum summer or winter daily emissions results from CalEEMod. Details of the emission calculations are provided in Appendix B-1, Emission Calculations.

Table 3.2-10
Estimated Maximum Daily Operational Criteria Air Pollutant Emissions - Unmitigated

Emission Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	pounds per day					
Proposed Project						
Area	158.51	0.01	0.74	0.00	0.01	0.01
Energy	2.08	18.95	15.92	0.11	1.44	1.44

Table 3.2-10
Estimated Maximum Daily Operational Criteria Air Pollutant Emissions - Unmitigated

Emission Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	pounds per day					
Mobile	36.76	500.87	881.31	3.88	324.57	82.57
Off-road Equipment	26.40	136.69	350.16	0.64	1.62	1.62
Stationary (Emergency Generators)	1.55	3.31	28.66	0.05	0.11	0.11
Transport Refrigeration Units	2.87	27.84	23.32	0.01	1.09	1.00
Total	**228.17**	**687.67**	**1,300.11**	**4.69**	**328.84**	**86.75**
Existing Scenario						
Area	46.80	0.01	0.22	0.00	0.00	0.00
Energy	0.73	6.59	5.53	0.04	0.50	0.50
Mobile	50.45	572.15	614.11	2.29	115.82	35.63
Off-road Equipment	9.55	120.58	118.89	0.20	5.48	5.04
Total	**107.53**	**699.33**	**738.75**	**2.53**	**121.80**	**41.17**
Net Change in Emissions						
Net Change (Proposed Project – Existing Scenario)	**120.64**	**(11.66)**	**561.36**	**2.16**	**207.05**	**45.58**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**Yes**	No	**Yes**	No	**Yes**	No

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District.
See Appendix B-1, Emission Calculations, for complete results.
Numbers in parenthesis represent a negative number.
Totals may not sum due to rounding.
The values shown are the maximum summer or winter daily emissions results from CalEEMod.
The Proposed Project emissions reflect operational year 2040. The Existing Scenario emissions reflect operational year 2018.
Off-road equipment includes emissions from the diesel rough terrain forklifts and the diesel yard trucks. CalEEMod erroneously reports criteria air pollutant emissions associated with electric off-road equipment, including the electric forklift; therefore, those erroneous criteria air pollutant emissions from electric forklifts are omitted.
Limited to sources discussed under Section 3.2.3.2.

As shown in Table 3.2-10, the net change in combined daily area, energy, mobile, and other source emissions from the Proposed Project and the Existing Scenario would exceed the SCAQMD operational mass daily thresholds for VOC, CO, and PM_{10}. The net change in NO_x, SO_x, and $PM_{2.5}$ emissions are not anticipated to exceed SCAQMD operational thresholds. As discussed previously, emissions are limited to sources that are discussed in Section 3.2.3.2 and sources where Proposed Project-specifics are available or can be reasonably estimated. Impacts associated with Proposed Project-generated operational criteria air pollutant emissions would be potentially significant.

As discussed in Section 3.2.2.4, Air Quality Conditions (South Coast Air Basin Attainment Designation), the SCAB has been designated as a national nonattainment area for O_3 and $PM_{2.5}$ and a California nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. The nonattainment status is the result of cumulative emissions from various sources of air pollutants and their precursors within the SCAB, including motor vehicles, off-road equipment, and commercial and industrial facilities. Construction and operation of the Proposed Project would generate VOC and NO_x emissions (which are precursors to O_3) and emissions of PM_{10} and $PM_{2.5}$. As indicated in Tables 3.2-10 and 3.2-11, Proposed Project-generated construction emissions would exceed the SCAQMD emission-based construction significance thresholds for VOC and NO_x, would exceed the SCAQMD operational thresholds for VOC and PM_{10}.

Cumulative localized impacts would potentially occur if a construction project were to occur concurrently with another off-site project. Construction schedules for potential future projects near the Plan Area are currently unknown; therefore, potential construction impacts associated with two or more simultaneous projects would be considered speculative.[15] However, future projects would be subject to CEQA and would require air quality analysis and, where necessary, mitigation if the project would exceed SCAQMD thresholds. Criteria air pollutant emissions associated with construction activity of future projects would be reduced through implementation of control measures required by the SCAQMD. Cumulative PM_{10} and $PM_{2.5}$ emissions would be reduced because all future projects would be subject to SCAQMD Rule 403 (Fugitive Dust), which sets forth general and specific requirements for all construction sites in the SCAQMD. In addition, cumulative VOC emissions would be subject to SCAQMD Rule 1113 (Architectural Coatings).

Based on the Proposed Project-generated construction and operational emissions of VOC, NO_x, PM_{10}, and $PM_{2.5}$ the Proposed Project would result in a cumulatively considerable increase in emissions of nonattainment pollutants. Impacts would be potentially significant and, thus, require mitigation.

As discussed above, prior to mitigation, the Proposed Project would result in emissions that would exceed the SCAQMD thresholds for VOC and NO_x during construction, as well as VOC, CO, and PM_{10} exceedances during operations. Notably, since the emission-based thresholds used in this analysis were established to provide Proposed Project-level estimates of criteria air pollutant quantities that the SCAB can accommodate without affecting the attainment dates for the ambient air quality standards, and since the EPA and

[15] The State CEQA Guidelines state that if a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact (14 CCR 15145). This discussion is nonetheless provided in an effort to show good-faith analysis and comply with CEQA's information disclosure requirements.

CARB have established the ambient air quality standards at levels above which concentrations could be harmful to human health and welfare, with an adequate margin of safety, elevated levels of criteria air pollutants above adopted thresholds as a result of the Proposed Project's construction and operation could cause adverse health effects associated with these pollutants. (The effects typically associated with unhealthy levels of criteria air pollutant exposure are described in Section 3.2.1.2, Pollutants and Effects, above.) However, as detailed in the Appendix B-2, Health Effects from Criteria Air Pollutants Memorandum, there are numerous scientific and technological complexities associated with correlating criteria air pollutant emissions from an individual project to specific health effects or potential additional nonattainment days. In addition, methods available for conducting health impact assessments (see Appendix B-2, Health Effects from Criteria Air Pollutants Memorandum, for method details) require project emissions that are estimated with a high-level of accuracy, which is not possible for the Proposed Project due to the nature of it being a specific plan. For CEQA purposes, it is assumed that the entire GCSP would be built out by 2040, whereas employment projections only estimate 44% job absorption by 2040 (the remaining 56% of jobs would occur after 2040) and full buildout may never occur. For these reasons, conducting a health impact assessment may not yield accurate results and would likely overestimate health effects associated with the Proposed Project. Nonetheless, because the Proposed Project would exceed the SCAQMD mass daily thresholds of VOC, NO_x, CO, and PM_{10} during construction and/or operation, the Proposed Project could have a significant impact on public health.

Mitigation measures **MM-AQ-4** (Vehicle Miles Traveled Reduction Strategies), **MM-AQ-5** (Encourage Electric Vehicles), **MM-AQ-6** (Idling Restriction), **MM-AQ-7** (Energy Conservation), **MM-AQ-8** (Low-VOC-Green Cleaning Product Education Program), **MM-AQ-9** (Electric Forklifts), and **MM-AQ-10** (TRU Plug-Ins) would be required to reduce emissions generated during operation of the Proposed Project. Nonetheless, even with the implementation of mitigation, potential impacts during operation of the Proposed Project would remain **significant and unavoidable**.

Summary

CEQA Impact Determination

Because construction specifications are not currently available, under a conservative scenario where maximum emissions from each assessed construction phase would occur concurrently, estimated Proposed Project emissions would exceed the SCAQMD thresholds for VOC and NO_x. Emissions of CO, SO_x, PM_{10}, and $PM_{2.5}$ are not estimated to exceed SCAQMD thresholds. The implementation of mitigation measures **MM-AQ-1** through

MM-AQ-3 would be required to reduce Proposed Project construction-related emissions. As described previously, mitigation measure **MM-AQ-1** would reduce various air pollutant emissions associated with construction equipment operation, mitigation measure **MM-AQ-2** would reduce dust-related PM_{10} and $PM_{2.5}$ emissions generated during construction (even though estimated Proposed Project mass daily emissions do not exceed the $PM_{10,}$ and $PM_{2.5}$), and mitigation measure **MM-AQ-3** would reduce VOC emissions generated the application of architectural coating during construction. Nonetheless, even with the implementation of mitigation, Proposed Project-generated construction criteria air pollutant emissions would remain **significant and unavoidable**, under CEQA.

During operations, Proposed Project-generated VOC, CO, and PM_{10} would exceed the SCAQMD thresholds. Mitigation measures **MM-AQ-4** (Vehicle Miles Traveled Reduction Strategies), **MM-AQ-5** (Encourage Electric Vehicles), **MM-AQ-6** (Idling Restriction), **MM-AQ-7** (Energy Conservation), **MM-AQ-8** (Low-VOC-Green Cleaning Product Education Program), **MM-AQ-9** (Electric Forklifts), and **MM-AQ-10** (TRU Plug-Ins) would be required to reduce emissions generated during operation of the Proposed Project. Nonetheless, even with the implementation of mitigation, potential impacts during operation of the Proposed Project would remain **significant and unavoidable** under CEQA.

NEPA Impact Determination

See below discussion for the evaluation of the Proposed Project Clean Air Act General Conformity. This NEPA determination is based on the CEQA determination provided above.

Because construction specifications are not currently available, under a conservative scenario where maximum emissions from each assessed construction phase would occur concurrently, estimated Proposed Project emissions would exceed the SCAQMD thresholds for VOC and NO_x. Emissions of CO, SO_x, $PM_{10,}$ and $PM_{2.5}$ are not estimated to exceed SCAQMD thresholds. The implementation of mitigation measures **MM-AQ-1** through **MM-AQ-3** would be required to reduce Proposed Project construction-related emissions. As described previously, mitigation measure **MM-AQ-1** would reduce various air pollutant emissions associated with construction equipment operation, mitigation measure **MM-AQ-2** would reduce dust-related PM_{10} and $PM_{2.5}$ emissions generated during construction (even though estimated Proposed Project mass daily emissions do not exceed the $PM_{10,}$ and $PM_{2.5}$), and mitigation measure **MM-AQ-3** would reduce VOC emissions generated by the application of architectural coating during construction. Nonetheless, even with the implementation of mitigation measures, Proposed Project-generated construction criteria air pollutant emissions would remain unavoidable.

During operations, Proposed Project-generated VOC, CO, and PM_{10} emissions would exceed the SCAQMD thresholds. Mitigation measures **MM-AQ-4** (Vehicle Miles Traveled Reduction Strategies), **MM-AQ-5** (Encourage Electric Vehicles), **MM-AQ-6** (Idling Restriction), **MM-AQ-7** (Energy Conservation), **MM-AQ-8** (Low-VOC-Green Cleaning Product Education Program), **MM-AQ-9** (Electric Forklifts), and **MM-AQ-10** (TRU Plug-Ins) would be required to reduce emissions generated during operation of the Proposed Project. Nonetheless, even with the implementation of mitigation measures, potential effects during operation of the Proposed Project would remain **adverse** under NEPA.

Clean Air Act General Conformity

As discussed previously, the first step in the Clean Air Act General Conformity analysis is the applicability analysis where project-generated emissions are compared to the appropriate de minimis thresholds. Annual Proposed Project construction emissions are presented in Table 3.2-11, Estimated Annual Construction (On-Site and Off-Site) Criteria Air Pollutant Emissions by Phase - Unmitigated. As discussed previously, 2020 was assumed as the first year of construction, which would represent the most conservative analysis as emission factors for equipment and vehicles decrease overtime. The 2020 scenario assumes buildout of 5% of the Proposed Project, which assumes steady development of the GCSP over 20 years.

Table 3.2-11
Estimated Annual Construction (On-Site and Off-Site) Criteria Air Pollutant Emissions by Phase - Unmitigated

	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Tons per Year					
2020	2.50	7.04	6.62	0.02	3.26	0.79
De Minimis Threshold	*10*	*10*	*100*	*N/A*	*100*	*70*
Threshold Exceeded?	No	No	No	N/A	No	No

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter.
See Appendix B-1, Emission Calculations, for complete results.
The values shown are the annual emissions results from CalEEMod.
These estimates implementation of the Proposed Project's fugitive dust control strategies, including watering of an active site two times per day.
The SCAQMD is in attainment for SO_x under the NAAQS; however, annual emissions are presented for disclosure.

As shown in Table 3.2-11, estimated Proposed Project-generated construction emissions within a typical year of construction would not exceed the de minimis thresholds and no additional General Conformity analysis is required.

Annual operational emissions resulting from full buildout of the Proposed Project in 2040 and annual operational emissions associated with the Existing Scenario in 2018 are presented in Table 3.2-12, Estimated Annual Operational Criteria Air Pollutant Emissions - Unmitigated.

Table 3.2-12
Estimated Annual Operational Criteria Air Pollutant Emissions - Unmitigated

Emission Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Tons per year					
Proposed Project						
Area	28.92	0.00	0.09	0.00	0.00	0.00
Energy	0.38	3.46	2.91	0.02	0.26	0.26
Mobile	6.71	91.41	160.84	0.71	59.23	15.07
Off-road Equipment	4.82	24.95	63.90	0.12	0.30	0.30
Stationary	0.04	0.08	0.72	0.00	0.00	0.00
Transport Refrigeration Units	0.52	5.08	4.26	0.00	0.20	0.18
Total	**41.39**	**124.98**	**232.72**	**0.85**	**59.99**	**15.81**
Existing Scenario						
Area	8.54	0.00	0.03	0.00	0.00	0.00
Energy	0.13	1.20	1.01	0.00	0.09	0.09
Mobile	9.21	104.42	112.08	0.42	21.14	6.50
Off-road Equipment	1.74	22.01	21.70	0.04	1.00	0.92
Total	**19.62**	**127.63**	**134.82**	**0.46**	**22.23**	**7.51**
Net Change in Emissions						
Net Change (Proposed Project – Existing Scenario)	**21.77**	**(2.65)**	**97.90**	**0.39**	**37.77**	**8.30**
De Minimis Threshold	*10*	*10*	*100*	*N/A*	*100*	*70*
Threshold Exceeded?	**Yes**	**No**	**No**	**N/A**	**No**	**No**

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District.
See Appendix B-1, Emission Calculations, for complete results.
Numbers in parenthesis represent a negative number.
Totals may not sum due to rounding.
The values shown are the annual emissions results from CalEEMod.
The Proposed Project emissions reflect operational year 2040. The Existing Scenario emissions reflect operational year 2018.
Off-road equipment includes emissions from the diesel rough terrain forklifts and the diesel yard trucks. CalEEMod erroneously reports criteria air pollutant emissions associated with electric off-road equipment, including the electric forklift; therefore, those erroneous criteria air pollutant emissions from electric forklifts are omitted.
Limited to sources discussed under Section 3.2.3.2.
The SCAQMD is in attainment for SO_x under the NAAQS; however, annual emissions are presented for disclosure.

As shown in Table 3.2-12, the net change in combined annual emissions from the Proposed Project and the Existing Scenario would exceed the de minimis thresholds for VOC; emissions of NO_x, CO, SO_x, CO, PM_{10} and $PM_{2.5}$ are not anticipated to exceed de minimis thresholds.

Because the Proposed Project exceeds the applicability analysis for VOC, the Proposed Project must then demonstrate conformity by meeting one or more of the methods specified in the regulation for determining conformity as presented in Section 3.2.3.1.[16] For this analysis, option 4, which is demonstrating that the Proposed Project's motor vehicle emissions are included in the current regional emission analysis for the area's transportation plan, is pursued.

The applicable metropolitan planning organization for the Proposed Project is SCAG and the applicable RTP is Connect SoCal, the 2020-2045 RTP/SCS. For the traffic analysis zones (TAZs) that the GCSP is located within, SCAG estimates a base of 7,000 employees in 2016 (pers. comm, Zhou 2019a). For those TAZs that the Proposed Project touches, SCAG estimates a growth of 2,000 employees between 2016 and 2040 (pers. comm, Zhou 2019b). However, it is more reasonable to allocate half of that growth (1,000 employees) to the GCSP rather than all of it to allow for other growth in the area (pers. comm, Zhou 2019b). As such, 8,000 employees are estimated for the Plan Area in 2040 (base of 7,000 employees plus 1,000 employee growth).

Between 2020 and 2040, the Proposed Project is estimated to result in a total growth of 4,884 employees (Svesson 2020). As such, the Proposed Project employment growth and associated mobile source emissions are included in the SCAG 2020-2045 RTP/SCS (i.e., 4,884 employees is under the 8,000 employee projection for 2040) as well as the SCAG 2016 RTP/SCS. Therefore, the Proposed Project would not interfere with state and local plans to bring an area into attainment with the NAAQS and the Proposed Project is in conformance with the Clean Air Act and **no adverse effect would occur**.

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

Localized Significance Thresholds Analysis

As discussed in Section 3.2.1.3, Sensitive Receptors, sensitive receptors are those individuals more susceptible to the effects of air pollution than the population at large. People most likely to be affected by air pollution include children, the elderly, and people with cardiovascular and chronic respiratory diseases. According to the SCAQMD, sensitive receptors include residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 1993). As discussed in Section 3.2.1.3, the closest off-site sensitive receptors to the Plan Area include residences of the Bixby Knolls neighborhood and the California

[16] Also note that the Proposed Project would be required to comply with all of the SCAQMD rules and reasonably available control measures required in the SIP, as the SCAQMD's current rules, in large part, meet the U.S. EPA's criteria for reasonably available control technology acceptability and inclusion in the SIP as demonstration in the 2016 AQMP Reasonably Available Control Technology Demonstration.

Heights Historic District located adjacent to the west side of Cherry Avenue. Schools in the vicinity of the Proposed Project where sensitive receptors may spend considerable time include Burroughs Elementary School (on East 33rd Street in Signal Hill, between Orange Avenue and Gundry Avenue) and the Westerly School of Long Beach (East 29th Street).

An LST analysis has been prepared to determine potential impacts to nearby sensitive receptors during construction of the Proposed Project. As indicated in the discussion of the thresholds of significance (Section 3.2.3), SCAQMD also recommends the evaluation of localized NO_2, CO, PM_{10}, and $PM_{2.5}$ impacts as a result of construction activities to sensitive receptors in the immediate vicinity of the Plan Area. The impacts were analyzed using methods consistent with those in SCAQMD's Final LST Methodology (2009). According to the Final LST Methodology, "off-site mobile emissions from the project should not be included in the emissions compared to the LSTs" (SCAQMD 2009). Hauling of soils and construction materials associated with project construction are not expected to cause substantial air quality impacts to sensitive receptors along off-site roadways. Localized emissions from the trucks would be relatively brief in nature and would cease once the trucks pass through the main streets.

Construction activities associated with the Proposed Project would result in temporary sources of on-site fugitive dust and construction equipment emissions. As discussed above, off-site emissions from vendor trucks, haul trucks, and worker vehicle trips are not included in the LST analysis. The most stringent SCAQMD localized significance criteria for SRA 4 (for 1-acre project sites corresponding to a distance to a sensitive receptor of 25 meters, which represents a conservative analysis) are presented in Table 3.2-13, Localized Significance Thresholds Analysis for Proposed Project Construction, and compared to the maximum daily on-site emissions generated during construction of the Proposed Project in 2020.[17]

Table 3.2-13
Localized Significance Thresholds Analysis for Proposed Project Construction

Maximum On-Site Emissions	NO_2	CO	PM_{10}	$PM_{2.5}$
	Pounds per Day			
Construction emissions	100.40	63.92	20.65	12.98
SCAQMD LST	*57*	*585*	*4*	*3*
LST exceeded?	**Yes**	No	**Yes**	**Yes**

Source: SCAQMD 2009.

[17] As explained previously, the analysis assumes a construction start date of 2020, which represents the earliest date construction would initiate. Assuming the earliest start date for construction represents the worst-case scenario for criteria air pollutant emissions because equipment and vehicle emission factors for later years would be slightly less due to more stringent standards for in-use off-road equipment and heavy-duty trucks, as well as fleet turnover replacing older equipment and vehicles in later years.

Notes:
NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District; LST = localized significance threshold.
See Appendix B-1, Emission Calculations, for complete results.
Localized significance thresholds are shown for 1-acre project sites corresponding to a distance to a sensitive receptor of 25 meters. These estimates implementation of the Proposed Project's fugitive dust control strategies, including watering of an active site two times per day.

As shown in Table 3.2-13, construction activities would generate NO_2 (NO_x), PM_{10}, and $PM_{2.5}$ emissions in excess of site-specific LSTs.

CEQA Impact Determination

Therefore, localized construction impacts would be potentially significant and mitigation is required. Mitigation measures **MM-AQ-1** and **MM-AQ-2** (Construction Equipment Emissions Reductions and Fugitive Dust Control, respectively), would be required to reduce Proposed Project construction-related emissions. Nonetheless, even with the implementation of mitigation, site-specific construction impacts during construction of the Proposed Project would remain **significant and unavoidable** under CEQA.

NEPA Impact Determination

Therefore, localized construction effects would be potentially significant and mitigation is required. Mitigation measures **MM-AQ-1** and **MM-AQ-2** (Construction Equipment Emissions Reductions and Fugitive Dust Control, respectively), would be required to reduce Proposed Project construction-related emissions. Nonetheless, even with the implementation of mitigation, site-specific construction effects during construction of the Proposed Project would remain **adverse** under NEPA.

Carbon Monoxide Hotspots

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

At the time that the SCAQMD 1993 Handbook was published, the SCAB was designated nonattainment under the CAAQS and NAAQS for CO. In 2007, the SCAQMD was designated in attainment for CO under both the CAAQS and NAAQS as a result of the steady decline in CO concentrations in the SCAB due to turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities. The SCAQMD conducted CO modeling for the 2003 AQMP (Appendix V: Modeling and Attainment Demonstrations, SCAQMD 2003b) for the four worst-case intersections in the SCAB: (1) Wilshire Boulevard and Veteran Avenue, (2) Sunset Boulevard and Highland Avenue, (3) La Cienega Boulevard and Century Boulevard, and (4) Long Beach Boulevard and Imperial Highway. At the time the 2003 AQMP was prepared, the intersection of Wilshire Boulevard and Veteran Avenue was the most congested intersection in Los Angeles County, with an average daily traffic volume of about 100,000 vehicles per day. Using CO emission factors for 2002, the peak modeled CO 1-hour concentration was estimated to be 4.6 ppm at the intersection of Wilshire Boulevard and Veteran Avenue. When added to the maximum 1-hour CO concentration from 2016 through 2018 at the Webster monitoring station (see Table 3.2-3, Local Ambient Air Quality Data), which was 3.9 ppm in 2017, the 1-hour CO would be 8.5 ppm, while the CAAQS is 20 ppm.

The 2003 AQMP also projected 8-hour CO concentrations at these four intersections for 1997 and from 2002 through 2005. From years 2002 through 2005, the maximum 8-hour CO concentration was 3.8 ppm at the Sunset Boulevard and Highland Avenue intersection in 2002; the maximum 8-hour CO concentration was 3.4 ppm at the Wilshire Boulevard and Veteran Avenue in 2002. Adding the 3.8 ppm to the maximum 8-hour CO concentration from 2016 through 2018 at the Webster monitoring station (see Table 3.2-3), which was 2.6 ppm in 2017, the 8-hour CO would be 6.4 ppm, while the CAAQS is 9.0 ppm.

Accordingly, CO concentrations at congested intersections would not exceed the 1-hour or 8-hour CO CAAQS unless projected daily traffic would be at least over 100,000 vehicles per day. Because the Proposed Project would not increase daily traffic volumes at any study intersection to more than 100,000 vehicles per day,[18] a CO hotspot is not anticipated to occur and associated impacts would be less than significant.

[18] For each study intersection in each scenario evaluated in the TIA (Appendix D), the daily volumes were estimated by assuming that the AM peak hour intersection volumes represent 8% of the daily traffic volumes and the total PM peak hour intersection volumes represent 10% of the daily traffic volumes. Using this method, all 28 study intersections were estimated to result in less than 100,000 vehicles per day in every scenario evaluated (ranging from 8,060 vehicles to 84,663 vehicles).

CEQA Impact Determination

As such, potential Proposed Project-generated operational impacts associated with CO hotspots would be **less than significant** under CEQA.

NEPA Impact Determination

As such, potential Proposed Project-generated operational effects associated with CO hotspots would ensure **no adverse effect** under NEPA.

Toxic Air Contaminants

Construction

The Proposed Project could result in TAC exposure to existing or future sensitive land uses during construction. Diesel equipment would be subject to the CARB airborne toxic control measures for in-use off-road diesel fleets, which would minimize DPM emissions, including an airborne toxic control measure to limit idling of diesel-fueled commercial vehicles, which requires diesel-fueled vehicles with gross vehicle weights greater than 10,000 pounds to idle no more than 5 minutes at any location (13 CCR 2485). However, the levels of potential emissions in relation to the location of sensitive receptors cannot be estimated with a level of accuracy. As such, the potential health risk of exposing sensitive receptors to construction-generated TAC emissions, primarily DPM, is considered potentially significant and mitigation is required. Mitigation measure **MM-AQ-1,** which would result in reductions in exhaust PM_{10} emissions from construction equipment, would be required.

CEQA Impact Determination

Nonetheless, even with the implementation of mitigation, the potential health risk of exposing sensitive receptors to construction-generated TAC emissions, primarily DPM, is considered **significant and unavoidable** under CEQA.

NEPA Impact Determination

Nonetheless, even with the implementation of mitigation, the potential health risk of exposing sensitive receptors to construction-generated TAC emissions, primarily DPM, is considered **adverse** under NEPA.

Operation

The Proposed Project includes various nonresidential land uses, including industrial land uses such as manufacturing and warehousing, and research and development, which could

include various sources of TACs. As discussed in Section 3.2.3.2, potential sources of TAC emissions from the Proposed Project include, but are not limited to: emergency generators, boilers, broilers (meat cooking), ovens, cogeneration facilities, chillers, cooling towers, autoclave, metals production, painting and spray booths, off-road equipment (e.g., forklifts), truck idling, and TRUs. However, because the type and location of Proposed Project land uses and tenants have not been identified, the potential health risk associated with buildout of the GCSP cannot be accurately estimated. Due to the uncertainty of Proposed Project land uses and tenants, and their associated TAC emissions, as well as the potential location of additional sensitive receptors, and the effectiveness of TAC reduction measures, the Proposed Project would have a potentially significant health risk impact as a result of operation and mitigation is required. Because tenants and associated operational TAC sources have not been identified, not source-specific TAC mitigation measures cannot be identified at this time. However, to reduce the potential for the Proposed Project to expose sensitive receptors to TACs and the associated health risk, mitigation measures **MM-AQ-11** (Health Risk Siting), **MM-AQ-12** (Toxic Air Contaminant Reduction) and **MM-AQ-13** (Health Risk Assessment Requirements) would be implemented. Note that mitigation measures that reduce criteria air pollutants also reduce TACs, specifically mitigation measures **MM-AQ-6** (Idling Restriction), **MM-AQ-9** (Electric Forklifts), and **MM-AQ-10** (TRU Plug-Ins).

CEQA Impact Determination

Nonetheless, even with the implementation of mitigation, which cannot be quantified at this time, the Proposed Project would have a **significant and unavoidable** health risk impact as a result of operation under CEQA.

NEPA Impact Determination

Nonetheless, even with the implementation of mitigation, which cannot be quantified at this time, the Proposed Project would have an **adverse** health risk effect as a result of operation under NEPA.

Health Effects of Other Criteria Air Pollutants

Construction of the Proposed Project could result in emissions that would exceed the SCAQMD thresholds for criteria air pollutants including VOC and NO_x. Operation of the Proposed Project would result in emissions that would exceed the SCAQMD thresholds for criteria air pollutants including VOC, CO, and PM_{10}.

VOCs and NO_x are precursors to O_3, for which the SCAB is designated as nonattainment with respect to the NAAQS and CAAQS. The health effects associated with O_3 are

generally associated with reduced lung function. The contribution of VOCs and NO_x to regional ambient O_3 concentrations is the result of complex photochemistry. The increases in O_3 concentrations in the SCAB due to O_3 precursor emissions tend to be found downwind from the source location to allow time for the photochemical reactions to occur. However, the potential for exacerbating excessive O_3 concentrations would also depend on the time of year that the VOC emissions would occur because exceedances of the O_3 ambient air quality standards tend to occur between April and October when solar radiation is highest. The holistic effect of a single project's emissions of O_3 precursors is speculative because of the lack of quantitative methods to assess this impact. Nonetheless, because VOC and NO_x emissions associated with Proposed Project construction and/or operation would exceed the SCAQMD mass daily thresholds, it could minimally contribute to regional O_3 concentrations and the associated health effects.

Health effects that result from NO_2 and NO_x include respiratory irritation. Although Proposed Project construction would generate NO_x emissions that would exceed the SCAQMD mass daily thresholds, construction of the Proposed Project is not anticipated to contribute to exceedances of the NAAQS and CAAQS for NO_2 because the SCAB is designated as in attainment of the NAAQS and CAAQS for NO_2 and the existing NO_2 concentrations in the area are well below the NAAQS and CAAQS standards. Nonetheless, because there are nearby receptors to be affected by off-road construction equipment, the Proposed Project could result in potential health effects associated with NO_2 and NO_x during construction.

CO tends to be a localized impact associated with congested intersections. The associated potential for CO hotspots were discussed previously and are determined to be a less-than-significant impact. However, operation of the Proposed Project would generate CO emissions that would exceed the SCAQMD threshold during operation. Therefore, the Proposed Project's CO emissions could potentially contribute to significant health effects associated with this pollutant.

Operation of the Proposed Project would exceed the SCAQMD threshold for PM_{10}. As such, the Proposed Project would potentially contribute to exceedances of the NAAQS and CAAQS for particulate matter or would obstruct the SCAB from coming into attainment for these pollutants. Because the Proposed Project has the potential to contribute particulate matter during operation, the Proposed Project could result in associated health effects.

In summary, because construction and operation of the Proposed Project could result in exceedances of the SCAQMD significance thresholds for VOC, NO_x, CO, and PM_{10}, the potential health effects associated with criteria air pollutants are considered potentially significant. Notably, there are numerous scientific and technological complexities

associated with correlating criteria air pollutant emissions from an individual project to specific health effects or potential additional nonattainment days, and methods available to quantitatively evaluate health effects may not be appropriate to apply to emissions associated with the Proposed Specific Plan Project, which cannot be estimated with a high-level of accuracy and assumes full buildout by 2040, which may never occur. These subjects are discussed further in Appendix B-2, Health Effects from Criteria Air Pollutants Memorandum.

CEQA Impact Determination

The implementation of mitigation measures **MM-AQ-1** through **MM-AQ-3** would be required to reduce Proposed Project construction-related emissions, and the implementation of mitigation measures **MM-AQ-4** through **MM-AQ-10** would be required to reduce emissions generated during operation of the Proposed Project. Nonetheless, even with the implementation of mitigation, potential impacts would remain **significant and unavoidable** during both construction and operation under CEQA.

NEPA Impact Determination

The implementation of mitigation measures **MM-AQ-1** through **MM-AQ-3** would be required to reduce Proposed Project construction-related criteria air pollutant emissions, and the implementation of mitigation measures **MM-AQ-4** through **MM-AQ-10** would be required to reduce criteria air pollutant emissions generated during operation of the Proposed Project. Nonetheless, even with the implementation of mitigation, potential effects would remain **significant and adverse** during both construction and operation under NEPA.

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

Based on available information, the Proposed Project is not anticipated to result in other emissions that have not been addressed under Thresholds A through C. As such, this analysis focuses on the potential for the Proposed Project to generate odors.

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

Odors would be potentially generated from vehicles and equipment exhaust emissions during construction of the Proposed Project. Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment, architectural coatings, and asphalt pavement application. Such odors would disperse rapidly from the Plan Area and generally occur at magnitudes that would not affect substantial numbers of people.

Land uses and industrial operations that typically are associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. While the Proposed Project does not propose the aforementioned odor-generating land uses, based on potential types of land uses for the GCSP, during the operational phase of the Proposed Project, anticipated odors could be generated from industrial or retail land uses, including food-service odors.

CEQA Impact Determination

Potential odor impacts associated with Proposed Project construction would be **less than significant**. Because specific land uses and tenants have not been identified for the GCSP, odor sources associated with Proposed Project buildout and their potential to cause a significant impact to nearby sensitive receptors also cannot be completely identified. Therefore, the potential for the Proposed Project to generate an odor impact is considered potentially significant and mitigation measures **MM-AQ-14** (Odor Siting) and **MM-AQ-15** (Odor Abatement Plan), requiring the implementation of an Odor Abatement Plan, would be required for uses that could cause a significant odor impact. Therefore, impacts associated with odors during operation are considered **less than significant with mitigation incorporated** under CEQA.

NEPA Impact Determination

Because specific land uses and tenants have not been identified for the GCSP, odor sources associated with Proposed Project buildout and their potential to cause a significant effect to nearby sensitive receptors also cannot be completely identified. Therefore, the potential for the Proposed Project to generate an odor effect is considered potentially significant and adverse. Mitigation measures **MM AQ-14** (Odor Siting) and **MM-AQ-15** (Odor Abatement Plan), requiring the implementation of an Odor Abatement Plan, would be required to reduce these effects to **below a level of significance** under NEPA.

3.2.5 Cumulative Impacts

As discussed under Impact A through Impact D above, the Proposed Project would result in a cumulatively considerable increase in emissions of nonattainment pollutant and potential emissions of TACs. As such, cumulative impacts during both construction and operation are considered **significant and unavoidable** with the exception of CO hotspots, which would be **less than significant**.

3.2.6 Mitigation Measures

State CEQA Guidelines Section 15126.4 requires EIRs to describe feasible measures that can minimize significant adverse impacts. The following mitigation measures have been evaluated for feasibility and are incorporated in order to reduce potentially significant impacts related to air quality emissions during operation of the Proposed Project.

Mitigation measures **MM-AQ-1** through **MM-AQ-3** shall be implemented to reduce criteria air pollutant emissions generated during construction of the Proposed Project:

MM-AQ-1 **Construction Equipment Emissions Reductions.** The following measures shall be incorporated into the Proposed Project to reduce construction criteria air pollutant emissions, including VOC, NO_x, PM_{10}, and $PM_{2.5}$, generated by construction equipment used for future development projects implemented under the proposed GCSP:

a) For off-road equipment with engines rated at 50 horsepower or greater, no construction equipment shall be used that is less than Tier 4 Interim. An exemption from these requirements may be granted by the City in the event that the applicant documents that equipment with the required tier is not reasonably available and corresponding reductions in criteria air pollutant emissions are achieved from other construction equipment.[19] Before an exemption may be considered by the City, the applicant shall be required to demonstrate that two construction fleet owners/operators in the Los Angeles Region were contacted and that those owners/operators confirmed Tier 4 Interim or better equipment could not be located within the Los Angeles region. To ensure that Tier 4 construction equipment or better would be used during the Proposed Project's construction, the City shall include this requirement in applicable bid documents, purchase orders, and contracts. Successful contractor(s) must demonstrate the ability to supply the compliant construction equipment for use prior to any ground disturbing and construction activities.

[19] For example, if a Tier 4 Interim piece of equipment is not reasonably available at the time of construction and a lower tier equipment is used instead (e.g., Tier 3), another piece of equipment could be upgraded from a Tier 4 Interim to a higher tier (i.e., Tier 4 Final) or replaced with an alternative-fueled (not diesel-fueled) equipment to offset the emissions associated with using a piece of equipment that does not meet Tier 4 Interim standards.

b) Minimize simultaneous operation of multiple construction equipment units. During construction, vehicles in loading and unloading queues shall not idle for more than 5 minutes, and shall turn their engines off when not in use to reduce vehicle emissions.

c) Properly tune and maintain all construction equipment in accordance with manufacturer's specifications;

d) Where feasible, employ the use of electrical or alternative fueled (i.e., non-diesel) construction equipment, including forklifts, concrete/industrial saws, pumps, aerial lifts, air compressors, and other comparable equipment types to the extent commercially available.

e) To reduce the need for electric generators and other fuel-powered equipment, provide on-site electrical hookups for the use of hand tools such as saws, drills, and compressors used for building construction.

f) Develop a Construction Traffic Control Plan to ensure construction traffic and equipment use is minimized to the extent practicable. The Construction Traffic Control Plan shall include measures to reduce the number of large pieces of equipment operating simultaneously during peak construction periods, scheduling of vendor and haul truck trips to occur during non-peak hours, establish dedicated construction parking areas to encourage carpooling and efficiently accommodate construction vehicles, identify alternative routes to reduce traffic congestion during peak activities, and increase construction employee carpooling.

g) Encourage construction contractors to apply for South Coast Air Quality Management District "SOON" funds. The "SOON" program provides funds to applicable fleets for the purchase of commercially-available low-emission heavy-duty engines to achieve near-term reduction of NO_x emissions from in-use off-road diesel vehicles.

MM-AQ-2 **Fugitive Dust Control.** The following measures shall be incorporated into the Proposed Project to reduce construction fugitive dust emissions (PM_{10} and $PM_{2.5}$), generated by grading and construction activities of future development projects implemented under the proposed GCSP, consistent with SCAQMD Rule 403, with a goal of retaining dust on the site:

a) Water, or utilize another SCAQMD-approved dust control non-toxic agent, on the grading areas at least three times daily to minimize fugitive dust.

b) All permanent roadway improvements shall be constructed and paved as early as possible in the construction process to reduce construction vehicle travel on unpaved roads. To reduce fugitive dust from earth-moving operations, building

pads shall be finalized as soon as possible following site preparation and grading activities.

c) Stabilize grading areas as quickly as possible to minimize fugitive dust.

d) Apply chemical stabilizer, install a gravel pad, or pave the last 100 feet of internal travel path within the construction site prior to public road entry, and to on-site stockpiles of excavated material.

e) Remove any visible track-out into traveled public streets with the use of sweepers, water trucks, or similar method as soon as possible.

f) Provide sufficient perimeter erosion control to prevent washout of silty material onto public roads. Unpaved construction site egress points shall be graveled to prevent track-out.

g) Wet wash the construction access point at the end of the workday if any vehicle travel on unpaved surfaces has occurred.

h) Cover haul trucks or maintain at least 2 feet of freeboard to reduce blow-off during hauling.

i) Evaluate the need for reduction in dust generating activity, potential to stop work, and/or implementation of additional dust control measures if winds exceed 25 miles per hour.

j) Enforce a 15-mile-per-hour speed limit on unpaved surfaces.

k) Provide haul truck staging areas for the loading and unloading of soil and materials. Staging areas shall be located away from sensitive receptors, at the furthest feasible distance.

l) Construction Traffic Control Plans shall route delivery and haul trucks required during construction away from sensitive receptor locations and congested intersections, to the extent feasible. Construction Traffic Control plans shall be finalized and approved prior to issuance of grading permits.

m) Review and comply with any additional requirements of SCAQMD Rule 403.

MM-AQ-3 **Architectural Coating VOC Emissions.** To address the impact relative to VOC emissions, Super-Compliant VOC-content architectural coatings (0 grams per liter to less than 10 grams per liter VOC) shall be used during Proposed Project construction/application of paints and other architectural coatings to reduce ozone precursors. If paints and coatings with VOC content of 0 grams/liter to less than 10 grams/liter cannot be utilized, the developer shall avoid application of architectural coatings during the peak smog season: July, August, and September. The developer

shall procure architectural coatings from a supplier in compliance with the requirements of SCAQMD's Rule 1113 (Architectural Coatings).

Mitigation measures **MM-AQ-4** through **MM-AQ-10** shall be implemented to reduce criteria air pollutant emissions generated during operation of the Proposed Project:[20]

MM-AQ-4 **Vehicle Miles Traveled Reduction Strategies.** The Proposed Project shall implement a Transportation Demand Management (TDM) Program to facilitate increased opportunities for transit, bicycling, and pedestrian travel, as well as provide the resources, means, and incentives for ride-sharing and carpooling to reduce vehicle miles traveled and associated criteria air pollutant emissions. The following components are to be included in the TDM Program:

Bicycle and Pedestrian Travel

a) Develop a comprehensive pedestrian network designed to provide safe bicycle and pedestrian access between the various internal Proposed Project land uses, which will include design elements to enhance walkability and connectivity and shall minimize barriers to pedestrian access and interconnectivity. Physical barriers, such as walls or landscaping, that impede pedestrian circulation shall be eliminated.

b) The Proposed Project design shall include a network that connects the Proposed Project uses to the existing off-site facilities (e.g., existing off-site bike paths).

c) Proposed Project design shall include pedestrian/bicycle safety and traffic calming measures in excess of jurisdiction requirements. Roadways shall be designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips with traffic calming features. Traffic calming features may include: marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers, and others.

d) Provide bicycle parking facilities along main travel corridors: one bike rack space per 20 vehicle/employee parking spaces or to meet demand, whichever results in the greater number of bicycle racks.

[20] Regarding MM-AQ-5, Encourage Electric Vehicles, the GCSP includes a development standard that requires at least 3% of the total parking spaces, but not less than one, shall be capable of supporting future electric vehicle supply equipment. This MM is intended to be more stringent than already required by the GCSP.

e) Provide shower and locker facilities to encourage employees to bike and/or walk to work: one shower and three lockers per every 25 employees.

Ride-Sharing and Commute Reduction

f) Promote ridesharing programs through a multi-faceted approach, such as designating a certain percentage of parking spaces for ridesharing vehicles; designating adequate passenger loading and unloading and waiting areas for ridesharing vehicles; or providing a website or message board for coordinating rides.

g) Implement marketing strategies to reduce commute trips. Information sharing and marketing are important components to successful commute trip-reduction strategies. Implementing commute trip-reduction strategies without a complementary marketing strategy would result in lower VMT reductions. Marketing strategies may include: new employee orientation of trip reduction and alternative mode options; event promotions; or publications.

h) One percent (1%) of vehicle/employee parking spaces shall be reserved for preferential spaces for car pools and van pools.

i) Coordinate with the Southern California Association of Governments (SCAG) for carpool, vanpool, and rideshare programs that are specific to the Proposed Project.

j) Implement a demand-responsive shuttle service that provides access throughout the Plan Area, to the park-and-ride lots, and to the nearby transit centers.

Transit

k) Bus pull-ins shall be constructed where appropriate within the Plan Area.

l) Coordinate with SCAG on the future siting of transit stops/stations within or near the GCSP.

MM-AQ-5 **Encourage Electric Vehicles.** Subsequent future projects under the Proposed Project shall incorporate the following into final plans:

a) Designate 10% of parking spaces to be for electric and alternative fuel vehicles.

b) Install Level 2 EV charging stations in 6% of all parking spaces.

MM-AQ-6 **Idling Restriction.** For Proposed Project land uses that include truck idling, the Proposed Project shall minimize idling time of all vehicles and equipment to the extent feasible; idling for periods of greater than five (5) minutes shall be

prohibited. Signage shall be posted at truck parking spots, entrances, and truck bays advising that idling time shall not exceed five (5) minutes per idling location. To the extent feasible, the tenant shall restrict idling emission from trucks by using auxiliary power units and electrification.

MM-AQ-7 **Energy Conservation.** The following energy conservation measures into Proposed Project building plans:

a) Install a solar photovoltaic rooftop system to reduce the electric demand from the local grid.

b) Install Energy Star rated heating, cooling, lighting, and appliances.

c) Outdoor lighting shall be light emitting diodes (LED) or other high-efficiency lightbulbs.

d) Provide information on energy efficiency, energy efficient lighting and lighting control systems, energy management, and existing energy incentive programs to future tenants of the Proposed Project.

e) Non-residential structures shall meet the U.S. Green Building Council standards for cool roofs. This is defined as achieving a 3-year solar reflective index (SRI) of 64 for a low-sloped roof and 32 for a high-sloped roof.

f) Outdoor pavement, such as walkways and patios, shall include paving materials with 3-year SRI of 0.28 or initial SRI of 0.33.

g) Construction of modest cool roof, defined as Cool Roof Rating Council (CRRC) Rated 0.15 aged solar reflectance and 0.75 thermal emittance.

h) Use of Heating, Ventilation and Air Conditioning (HVAC) equipment with a Seasonal Energy Efficiency Ratio (SEER) of 12 or higher.

i) Installation of water heaters with an energy factor of 0.92 or higher.

j) Maximize the use of natural lighting and include daylighting (e.g., skylights, windows) in rooms with exterior walls that would normally be occupied.

k) Include high-efficacy artificial lighting in at least 50% of unit fixtures.

l) Install low-NOx water heaters and space heaters, solar water heaters, or tank-less water heaters.

m) Use passive solar cooling/heating.

n) Strategically plant trees to provide shade.

o) Structures shall be equipped with outdoor electric outlets in the front and rear of the structure to facilitate use of electrical lawn and garden equipment.

MM-AQ-8 **Low-VOC/Green Cleaning Product Educational Program.** Proposed Project tenants shall develop and implement a Low-VOC/Green Cleaning Product and Paint education program.

MM-AQ-9 **Electric Forklifts.** Proposed Project warehouse and manufacturing tenants shall require that all forklifts are electric-powered; if electric is not available or feasible, propane is acceptable.

MM-AQ-10 **Transport Refrigeration Unit Plug-Ins.** Electric plug-ins shall be installed at the loading docks at cold storage facilities to allow for transport refrigeration unit standby electric plug-in.

Mitigation measures **MM-AQ-11**, **MM-AQ-12,** and **MM-AQ-13** shall be implemented to reduce the potential for the Proposed Project to expose sensitive receptors to TACs and the associated health risk. Note that mitigation measures that reduce criteria air pollutants also reduce TACs, specifically mitigation measures **MM-AQ-6** (Idling Restriction), **MM-AQ-9** (Electric Forklifts), and **MM-AQ-10** (TRU Plug-Ins).

MM-AQ-11 **Health Risk Siting.** The City shall minimize exposure of sensitive receptors to toxic air contaminants (TACs), to the extent possible, by considering distance, orientation, and wind direction to minimize exposure and associated health risk when siting TAC-emitting sources near sensitive land uses.

MM-AQ-12 **Toxic Air Contaminant Reduction.** At the time of discretionary approval of new sources of TAC emissions in close proximity to existing sensitive land uses, the City shall require development projects to implement applicable best management practices, as necessary and feasible, that will reduce exposure to TACs. Specific reduction measures will be evaluated and determined depending on proposed land use TAC sources and feasibility.

MM-AQ-13 **Health Risk Assessment Requirements.** Consistent with the California Air Resources Board's recommendations on siting new sensitive land uses, a formal health risk assessment shall be performed under the following conditions:

a) *Distribution Centers.* For any distribution center that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week located within 1,000 feet of a sensitive receptor. In addition, configuration of

entry and exit points of the distribution center shall be considered to minimize exposure to sensitive receptors.

b) *Gasoline Dispensing Facilities*. For any large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater) within 300 feet of a sensitive receptor. For any typical gas dispensing facility (with a throughput of less than 3.6 million gallons per year) within 50 feet of a sensitive receptor.

c) *Dry Cleaners Using Perchloroethylene.* For any dry cleaning operation within 300 feet of a sensitive receptor. For operations with three of more machines, consult with the South Coast Air Quality Management District for when a health risk assessment shall be prepared as the distance to the closest sensitive receptor may be less than 300 feet.

d) *Other Sources of Toxic Air Contaminants*. For other sources of TACs, the City shall evaluate the need to prepare a health risk assessment based on the types of TACs and the distance to sensitive receptors.

Mitigation measures **MM-AQ-14** and **MM-AQ-15** shall be implemented to reduce Proposed Project generated odors:

MM AQ-14 **Odor Siting.** Land uses that have the potential to generate objectionable odors shall be located as far away as possible and/or downwind from sensitive receptors.

MM AQ-15 **Odor Abatement Plan.** To address odors from the Proposed Project, any odor-generating land use shall implement an Odor Abatement Plan (OAP). The OAP shall include the following:

a. Name and telephone number of contact person(s) at the facility responsible for logging in and responding to odor complaints

b. Policy and procedure describing the actions to be taken when an odor complaint is received, including the training provided to the staff on how to respond

c. Description of potential odor sources at the facility

d. Description of potential methods for reducing odors, including minimizing idling of delivery and service trucks and buses, process changes, facility modifications, and/or feasible add-on air pollution control equipment

e. Contingency measures to curtail emissions in the event of a public nuisance complaint.

3.2.7 Significance After Mitigation

Conflict with AQMP

Implementation of mitigation measures **MM-AQ-1** through **MM-AQ-10** would reduce construction and operational emissions; however, due to the lack of project-specific information, the effectiveness in reducing construction and operational emissions cannot be accurately quantified. Therefore, the potential for the Proposed Project to conflict with the SCAQMD 2016 AQMP is **significant and unavoidable**.

Cumulatively Considerable Net Increase of Nonattainment Criteria Air Pollutants

As discussed above, while mitigation would reduce Proposed Project-generated construction and operational emissions, the reduction in emissions cannot be accurately quantified. Therefore, the potential for the Proposed Project to result in a cumulatively considerable net increase of any criteria pollutant for which the Proposed Project region is non-attainment under an applicable national or California ambient air quality standard is **significant and unavoidable**.

Sensitive Receptor Impacts

All new development undergoing discretionary review would be required to evaluate existing TAC exposure and incorporate available reduction measures, if necessary; however, due to the uncertainty of future sensitive receptor locations and the effectiveness of TAC reduction measures, The Proposed Project's impact related to exposure of sensitive receptors to TAC would remain **significant and unavoidable**.

Other Emissions (Odors)

As specific permits are requested for potential odor-generating land uses, the City may further evaluate odor emissions from such uses to determine if additional environmental review is warranted at that time. However, with the implementation of mitigation measures **MM-AQ-14** and **MM-AQ-15**, Proposed Project operations would result in a **less-than-significant** odor impact.

3.2.8 References

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3.3 CULTURAL RESOURCES

This section describes existing cultural resources conditions on the proposed Globemaster Corridor Specific Plan (GCSP; Proposed Project) site and vicinity, identifies associated regulatory requirements, and analyzes the Proposed Project's impacts to cultural resources. The following discussion focuses on the existing cultural resources in the City of Long Beach (City) and more specifically, the Plan Area.

The Initial Study (IS) and Notice of Preparation (NOP) are contained in Appendix A-1, Initial Study; and Appendix A-2, Notice of Preparation, respectively. Comments received in response to the NOP (see Appendix A-3, Notice of Preparation Comment Letters) included a letter from the Native American Heritage Commission (NAHC) describing tribal consultation requirements and listing recommendations for cultural resources assessments. Recommendations included: conducting a search of the California Historical Research Information System (CHRIS); conducting a field survey (if determined necessary based on the CHRIS records search results); preparing a professional report detailing the findings of the field survey and records search; conducting a Sacred Lands File (SLF) search; consultation with California Native American tribes in compliance with Assembly Bill (AB) 52 and Senate Bill (SB) 18; and including provisions for the inadvertent discovery of cultural resources during construction and the protection of such resources. As demonstrated in this section, a cultural resources assessment at the programmatic level has been conducted for the Proposed Project, and this assessment adheres to these recommendations as appropriate.

The IS found that the Proposed Project would have a potentially significant impact as it relates to cultural resources (Appendix A-1). As such, all impacts will be addressed further in this Draft Program Environmental Impact Report (PEIR)/Draft Program Environmental Impact Statement (PEIS).

3.3.1 Existing Conditions

Cultural (Archaeological and Built Environment) Resources

CHRIS Record Search

Dudek conducted a California Historical Resources Information System (CHRIS) records search at the South Central Coastal Information Center (SCCIC) on September 5, 2018, for the Plan Area and a 0.5-mile radius study area. This search included their collection of mapped prehistoric, historical, and built-environment resources; Department of Parks and Recreation (DPR) site records; technical reports; and archival resources. Additional consulted sources included historical maps of the Plan Area, the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the California Historic Property Data File, and the lists of California State Historical Landmarks, California Points of Historical Interest, and the Archaeological Determinations of Eligibility.

Previously Conducted Cultural Resource Studies

The SCCIC records indicate that 25 previous cultural resources technical investigations have been conducted within 0.5-mile of the Plan Area between 1976 and 2014. Of these 25 investigations, seven overlap the Plan Area (Table 3.3-1). Approximately 50 percent of the Plan Area has been previously investigated.

Table 3.3-1
Previously Conducted Technical Studies Within 0.5-Mile of the Plan Area

Report Number LA-	Author	Year	Report Title	Proximity to Plan Area
01672	Galvin, Kathleen F.	1987	Spring Street-Long Beach Boulevard to Cherry Avenue Archaeological/Historical Survey	Overlaps
02887	Demcak, Carol R.	1993	Cultural Resource Assessment for Proposed Project for Lakewood Boulevard (rte. 19) in the City of Long Beach, California	Outside
03651	Cottrell, Marie G.	1976	Record Search for Area No. 1 in the City of Signal Hill	Overlaps
04354	Anonymous	1977	Historic Property Survey for the Proposed Heartwell Park Bike Route	Outside
04632	Duke, Curt	1999	Cultural Resource Assessment for Pacific Bell Mobile Services Facility La 621-01, County of Los Angeles, California	Overlaps
04750	Duke, Curt	1999	Cultural Resource Assessment for the AT&T Wireless Services Facility Number C574, County of Los Angeles, California	Outside
05121	Duke, Curt	2000	Cultural Resource Assessment for Pacific Bell Mobile Services Facility LA 629-03, County of Los Angeles, Ca	Outside
05215	McKenna, Jeanette A.	2001	A Cultural Resources Investigation of the Proposed Long Beach Ocean Desalination Project, Long Beach, Los Angeles County, California	Outside
05405	McKenna, Jeanette A.	2000	A Phase I Cultural Resource Investigation of the City of Signal Hill Home Depot Commercial Center Project Area, Signal Hill, Los Angeles County, California	Outside
05406	Maki, Mary K.	2001	Negative Phase I Archaeological Survey of 5.6 Acres for the Las Brisas Neighborhood Redevelopment Project City of Signal Hill, Los Angeles County, Ca	Outside
05879	Duke, Curt	2002	Cultural Resource Assessment AT&T Wireless Services Facility No. 05087a-01 Los Angeles County, California	Outside
06176	Unknown	2001	Nextel Communications CA-7809a/Kessler 3770 Cherry Avenue Lakewood, California	Outside
06827	Strudwick, Ivan H.	1999	Results of the Cultural Resources Records Search and Survey for the Long Beach Sports Park Project Located Near Signal Hill in the City of Long Beach, Los Angeles County, California	Overlaps
07181	Maki, Mary K.	2005	CDC – Las Brisas II Housing Development	Outside

Table 3.3-1
Previously Conducted Technical Studies Within 0.5-Mile of the Plan Area

Report Number LA-	Author	Year	Report Title	Proximity to Plan Area
08434	Bonner, Wayne H.	2004	Cultural Resource Records Search Results and Site Visit for Nextek Communications Site Candidate Ca7747-c (new Dolphin), 2875 Junipero Avenue, Signal Hill, Los Angeles County, California	Outside
08477	Billat, Lorna	2005	Orange 405/CA-7745b, Cellular Antenna Installation on an Historic Property, 3401 Orange Avenue, Long Beach, Ca	Outside
08898	Baker, Cindy and Mary L. Maniery	2007	Cultural Resource Inventory and Evaluation of United States Army Reserve 63d Regional Readiness Command Facilities	Outside
09145	Bonner, Wayne H.	2007	Direct APE Historic Architectural Assessment for Royal Street Communications, LLC Candidate LA2892C (SCE Hinson Harbor), 2377 West Willow Street, Long Beach, Los Angeles County, California	Outside
09568	Wlodarski, Robert J.	2009	Proposed Bechtel Wireless Telecommunications Site LA0115 (Hartley Medical Building), 2888 Long Beach Blvd, Long Beach, California 90806	Outside
09574	Bonner, Wanye H., Sarah A. Williams, and Kathleen A. Crawford	2009	Cultural Resources Records Search and Site Visit Results for T-Mobile USA Candidate LA33750A (Golf Center) 2550 Orange Avenue, Signal Hill, Los Angeles County, CA	Outside
09695	Onken, Jill, Ellen Chapman, William Hayden, Ken Becker, Christopher Doolittle, and Jeffrey H. Altschul	2006	Archaeological Testing in Support of the Douglas Park Project, Long Beach, California; Statistical Research, Inc. Technical Report 06-71	Outside
10771	Feldman, Jessica B.	2005	Historical Assessment and Impacts Discussion for the Proposed Terminal Improvements, Long Beach Airport	Overlaps
11429	McKenna, Jeanette A.	2011	Archaeological/Cultural Resources Records Search, City of Lakewood Overview	Overlaps
12056	Bonner, Wayne	2012	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate LA02621A (Extra Space Storage), 2101 East Carson Street, Long Beach, Los Angeles County, California	Overlaps
13153	Brunzell, David	2014	Cultural Resources Assessment of the Long Beach Airport Project, Long Beach, Los Angeles County, California (BCR Consulting Project No. TRF1412)	Outside

Previously Recorded Cultural Resources

A total of eight (8) previously recorded sites or properties were identified within the 0.5-mile search buffer, summarized in Table 3.3-2, SCCIC Results: Previously Recorded Cultural Resources Within 0.5-Mile of the Plan Area. Of these resources, six are built-environment

resources, two of which are located within the Plan Area. The other two resources, P-19-000838/CA-LAN-838 and P-19-000839/CA-LAN-839, are prehistoric sites comprised of shell midden deposits that were recorded in 1971, 1973, and 1987; however, these prehistoric sites were identified outside the Plan Area. The two built-environment resources that overlap the Plan Area are the Lomita Gas Company/Petrolane Compressor House (P-19-187156) and the Storage USA Building (P-190082). These two properties are discussed in detail in the Built Environment section, below.

Table 3.3-2
SCCIC Results: Previously Recorded Cultural Resources Within 0.5-Mile of the Plan Area

Primary Number P-19-	Trinomial CA-LAN-	Description	Recorded By/Year	Eligibility Status	Proximity to Plan Area
000838	838	Small shell midden that was identified on the western side of Signal Hill and was destroyed in March of 1976	Fenenga, G. (1971; Updated 1973)	-	Outside
000839	839	Shell midden eroding out of covering of crude asphaltum that was identified within sandy-covered tar amongst oil wells	Fenenga, G. (1971); Galvin (Updated 1987)	-	Outside
187112	-	Lomita Gasoline Company/Petrolane Office Building at 2901 Orange Avenue; HRI #066945	Woodward, Lucinda (Evaluator) (1989)	2S2: Eligible for NRHP through Section 106; Listed in CRHR	Outside
187156	-	Lomita Gas Company/Petrolane Compressor House; HRI #066945	Gualtieri, Kathryn (State Historic Preservation Officer) (1989)	2S2: Eligible for NRHP through Section 106; Listed in CRHR	Overlaps
187639	-	One-story commercial building located at 3401 Orange Avenue that was constructed in 1934 in the Art Deco Style of architecture. Additions and modifications to this building occurred between 1936 and 2004; HRI #155875	Brady, Jon L. (2005)	Ineligible	Outside
187956	-	Schroeder Hall USAR Center (historic name) or Long Beach USAR Center, Facility No. CA022 is a Contemporary style building constructed in 1960 by the Directorate of Facility Engineers, For MacArthur on behalf of the U.S. Army Reserve (USAR) as a training and administrative facility	PAR Environmental Services, Inc. (2006)	3S: Appears eligible for NRHP as individual property	Outside
188438	-	Orange-Carson Plaza consists of a one-story, masonry strip-mall or suburban plaza style plaza consisting of five buildings that was developed from 1955 through 1987.	Supernowicz, Dana (2009)	6Y2: Ineligible for NRHP through Section 106	Outside

Table 3.3-2
SCCIC Results: Previously Recorded Cultural Resources Within 0.5-Mile of the Plan Area

Primary Number P-19-	Trinomial CA-LAN-	Description	Recorded By/Year	Eligibility Status	Proximity to Plan Area
190082	-	Storage USA Building is a commercial building that is two- and three-stories high in Modern Style architecture that was constructed in 1956 and altered in 1985-1987 and in 2004	Crawford, K.A. (2012)	6Z: Found ineligible for NR, CR or Local designation through survey evaluation.	Overlaps

NAHC Sacred Lands File Search

Dudek contacted the NAHC on November 18, 2018, to request a search of the SLF for the Proposed Project. The NAHC responded via email on January 3, 2019, indicating that the search did not identify any Native American resources near the Plan Area. Because the SLF search does not include an exhaustive list of Native American cultural resources, the NAHC suggested contacting Native American individuals and/or tribal organizations who may have direct knowledge of cultural resources in or near the Plan Area. The City received one request for consultation from the Gabrieleno Band of Mission Indians – Kizh Nation. The city completed consultation with the tribe on July 8, 2020. See Section 3.12, Tribal Cultural Resources, of this Draft PEIR/PEIS, for further details on tribal consultation.

Built Environment

As stated above, two (2) previously recorded built environment properties, located within the Plan Area, were identified through the records search (summarized in Table 3.3-2, SCCIC Results: Previously Recorded Cultural Resources Within 0.5-Mile of the Plan Area). These resources consist of a compressor house associated with the Lomita Gas Company (P-19-187156) at the corner of Orange Avenue and E. Spring Street and a commercial storage building west of the E. Carson Street and Cherry Avenue (P-19-190082). They are briefly summarized below:

P-19-187156

This resource consists of the Lomita Gas Company compressor house building, on the west side of Orange Street between 29th and E. Spring Streets. The building was determined eligible for the NRHP through Section 106 and is listed in the CRHR under Criterion A for its contribution to the history of gas and petroleum industry in Long Beach. Desktop analysis through Google Earth and review of historic aerials indicates that this resource was demolished or removed between

November 2009 and March 2011. The Lomita Gas Company compressor house building is no longer extant, and as such, it is not considered a historical resource for the purposes of CEQA.

P-19-190082

This resource consists of a commercial storage building located at 2102 E. Carson Street (APN 7151-001-015), just east of the E. Carson Street and Cherry Avenue intersection. The building, constructed in 1956, is a two-and three-story asymmetrical, Modern-style commercial building with a stucco exterior and flat roof. Now a Storage USA building, it was recommended ineligible for the NRHP and CRHR in 2012. This property is not considered a historical resource for the purposes of CEQA.

Additional Background Research

Dudek conducted additional background research to identify the presence of other historic-era built environment properties that were not identified through the CHRIS records search sited within and adjacent to the Plan Area. The research included identifying any previously recorded, NRHP and/or CRHR eligible, or locally designated CEQA historical resources. Research was also undertaken at the programmatic level to document the presence of properties within or adjacent to the Plan Area that contain properties with buildings 45 years old or older. This group of properties are not known to be significant but could require further study and analysis in the future if project-level activities result in potential impacts. This additional research also assisted in the preparation of the historical context for the Plan Area, contributing to a larger understanding of the historic era development of the region.

Specifically, the Long Beach Historic Resource Inventory (HRI), the City of Long Beach Landmarks, Sanborn Fire Insurance maps, and aerial photograph collections were consulted. A summary of the findings is documented below.

Historic Resource Inventory (HRI)

In addition to the SCCIC Record search, the Long Beach Historic Resource Inventory (HRI) Data File records indicates that thirty-eight resources have been previously recorded or evaluated, and are documented in the HRI results, within a 0.5-mile radius of the Plan Area (Table 3.3-3). Of the 38 properties found within the 0.5-mile records search buffer, only one of the properties is located in the Plan Area: the Lomita Gas Company Compressor House; P-19-187156. As noted above, the Lomita Gas Company Compressor House (P-19-187156) has been demolished and is no longer a CEQA historical resource**.**

Table 3.3-3
HRI Results Within 0.5-Mile of the Plan Area

Primary Number, P-19-	Address	Name	Date	Status Code	Proximity to the Plan Area
179178	1318 37th Street	--	1925	5D2 -- Contributor to a district that is eligible for local listing or designation	Outside
179170	3451 Brayton Ave	--	1930	5D2	Outside
179171	3459 Brayton Ave	--	1929	5D2	Outside
179189	3475 Brayton Ave	--	1925	5D2	Outside
179197	3535 Brayton Ave	--	1925	5D2	Outside
179183	3609 Brayton Ave	--	1933	5D2	Outside
179198	3643 Brayton Ave	--	1936	5D2	Outside
179199	3645 Brayton Ave	--	1930	5D2	Outside
179179	3735 Brayton Ave	--	1925	5D2	Outside
179200	3739 Brayton Ave	--	1932	5D2	Outside
179184	3759 Brayton Ave	--	1935	5D2	Outside
179172	3767 Brayton Ave	--	1927	5D2	Outside
179173	3502 California Ave	--	1930	5D2	Outside
--	1095 E Willow St	Sunnyside Cemetery	1906	6Y – Determined ineligible for NR by consensus through Section 106 process – Not evaluated for CR or Local Listing.	Outside
187956	3800 E Willow St	Schroeder Hall USAR Center	1960	2S2 – Eligible for NRHP through Section 106; Listed in CRHR: Criterion C	Outside
187956	3800 E Willow St	Schroeder Hall USAR Center/Organ	1960	2S2 – Eligible for NRHP through Section 106; Listed in CRHR: Criterion C	Outside
179180	3428 Falcon Ave	--	1929	5D2	Outside
179194	3602 Falcon Ave	--	1927	5D2	Outside
179195	3606 Falcon Ave	--	1927	5D2	Outside
179196	3610 Falcon Ave	--	1927	5D2	Outside
179175	3622 Falcon Ave	--	1931	5D2	Outside
179181	3625 Falcon Ave	--	1929	5D2	Outside
179211	3746 Falcon Ave	--	1912	7N – Needs to be re-evaluated (Formerly NR Status Code 4)	Outside
179212	3756 Falcon Ave	--	1912	5D2	Outside
179182	3757 Falcon Ave	--	1925	5D2	Outside
--	3530 Gaviota Ave	--	1938	6Y	Outside
--	3762 Gaviota Ave	--	--	6Y	Outside
179202	3610 Gundry Ave	--	1930	5D2	Outside
--	3621 Gundry Ave	--		6Y	Outside
--	3645 Gundry Ave	--	1924	6Y	Outside
--	2468 Olive Ave	--	1920	6Y	Outside

Table 3.3-3
HRI Results Within 0.5-Mile of the Plan Area

Primary Number, P-19-	Address	Name	Date	Status Code	Proximity to the Plan Area
187112	2901 Orange Ave	Lomita Gas Company / Petrolane Co. -- Office		2S2 – Eligible for NRHP through Section 106; Listed in CRHR: Criteria A and C	Outside
187156	0 Orange Ave	Lomita Gas Company /Petrolane Compressor House		2S2 – Eligible for NRHP through Section 106; Listed in CRHR: Criterion A	Within (No longer extant)
--	3401 Orange Ave	--	1934	6Y	Outside
179191	3419 Orange Ave	--	1933	5D2	Outside
--	3307 Walnut Ave	--	1926	6Y	Outside
--	3349 Walnut Ave	--	1926	6Y	Outside
179216	3717 Walnut Ave	--	1915	5D2	Outside
179192	3741 Walnut Ave	--	1929	5D2	Outside

City of Long Beach Historical Resources

A search of locally designated resources, including individual properties and historic districts, revealed that one Long Beach Historical Landmark is located within the Proposed Project corridor along Cherry Avenue: The Termo Company Building (3275 Cherry Avenue). This CEQA historical resource is significant as a City of Long Beach Landmark, under City of Long Beach Criterion A, for its association with oil-related businesses and for its architectural uniqueness among other contemporaneous oil-industry buildings. According to City of Long Beach Municipal Code Chapter 16.52.290, the Termo Company Building city landmark consists of an irregular-shaped plan, one story office building, with distinctive brick and stone cladding, chimneys and a wrapping porch, built in 1935 (City of Long Beach 16.52.290).

The California Heights Landmark District (CHLD), which is a City of Long Beach Landmark District, is located immediately adjacent to the Plan Area, just west of Cherry Avenue. The California Heights Landmark District boundaries are the west side of Gaviota Avenue, the south side of Bixby Road, the east side of Gardenia Avenue, and a variable southern boundary between Wardlow Road and 35th Street. The district is eligible, under City of Long Beach Criterion A, for reflecting the economic development of Long Beach and the creation of new housing subdivisions to serve expanding employment opportunities, beginning with the oil boom of the 1920s and lasting until 1950. The California Heights Historic District was surveyed and recorded in 1981. The Historic District was first established in February 1990 and expanded in May 2000 (City of Long Beach 16.52.290). As a formally designated local historic district, the CHLD and its contributing buildings qualify as historical resources under CEQA.

In response to the Notice of Preparation, the California Heights Neighborhood Association (CHNA), a nonprofit organization promoting preservation of the California Heights Historic District, sent the City of Long Beach Development Services and Planning Bureau a comment letter on October 11, 2018 regarding environmental concerns related to Proposed Project implementation. In this letter, CHNA suggested that twelve (12) properties, listed below, have potential association with the California Heights Historic District, as they were constructed within the historic district's period of significance (1924-1950) and are related to the historic district's development. These properties are not currently within the boundary of the CHLD and have not been formally evaluated under applicable eligibility criteria. The CHNA requested consideration of this group of properties, including further study and analysis should future project-level activities result in potential impacts (CNHA 2018):

- Fire Station No. 14, 1838 E. Wardlow Road (APN: 7148-020-024), constructed in 1941
- 3341 Cherry Avenue (APN: 7148-020-021), constructed in 1933
- 3275 Cherry Avenue (APN: 7148-020-009), constructed in 1929
- 3249 Cherry Avenue (APN: 7148-020-010), constructed in 1929
- 3170 Cherry Avenue (APN: 7149-006-047), constructed in 1940
- 3204 Cherry Avenue (APN: 7149-006-045), constructed in 1933
- 3252 Cherry Avenue (APN: 7149-006-042), constructed in 1937
- 3254 Cherry Avenue (APN: 7149-006-062), constructed in 1937
- 3366 Cherry Avenue (APN: 7149-006-035), constructed in 1937
- 3431 Cherry Avenue (APN: 7147-026-017), constructed in 1947
- Inglesia Católica Santisimo Sacramento, 1900 E. Carson Street (APN: 7137-013-001), constructed in 1942
- California Heights Baptist Church, 4110 Gardenia Avenue (APN: 7137-012-009), constructed in 1947

City of Long Beach Historic Context Statement

Some of the commercial/industrial properties in the Plan Area may meet the registration requirements outlined by the City of Long Beach Historic Context Statement for their association with the Oil Industry Subtheme (1921-1945) (Sapphos 2009: 82-87), or the Aerospace Industry Subtheme (Sapphos 2009: 87-90), either as individual resources or as contributors to a historic district.

Many buildings in the proposed Business Park Zone meet the 45-year age thresholds, and may meet the registration requirements outlined by the City of Long Beach Historic Context Statement for their association with the Oil Industry Subtheme (1921-1945) (Sapphos 2009: 82-87), or the Aerospace Industry Subtheme (Sapphos 2009: 87-90), and as a result of their clustering and density, may be eligible for a historic district of such buildings.

In the proposed General Industrial Zone, north of the I-405 freeway, building dates tended to cluster between 1929 and 1941, 1955 and 1965, and a few buildings built after 1979 (LA County Assessor 2018). Many buildings in this proposed Zone, which meet the 45-year age thresholds, may meet the registration requirements outlined by the City of Long Beach Historic Context Statement for their association with the Oil Industry Subtheme (1921-1945) (Sapphos 2009: 82-87), and as a result of the building clustering and density, may be eligible for a historic district of such buildings. In the proposed General Industrial Zone south of the I-405 freeway, building dates clustered between 1956 and 1965 and between 1970 and 1976, with some of the larger warehouses and buildings built after 1985 (LA County Assessor 2018). These industrial buildings are likely too recent for the period of significance for either the Oil Industry Subtheme (1921-1945) (Sapphos 2009: 82-87), or the Aerospace Industry Subtheme (Sapphos 2009: 87-90), identified in the City of Long Beach Historic Context Statement.

Los Angeles County Assessor Data

Based on Los Angeles County Assessor building data, within the proposed Business Park Zone, there is the Boeing Building (APN 7149-003-018, 2401 E. Wardlow Road), built in 1967; the C-17 Globemaster warehouse (APN 7149-006-053, 2400 E. Wardlow Road), built in 1970; and the Globemaster Fire Station (APN 7149-006-053, 2400 E. Wardlow Road), built in 1970. These buildings meet the 45-year age thresholds for evaluation, and may meet the registration requirements outlined by the City of Long Beach Historic Context Statement for their association with the Aerospace Industry Subtheme (Sapphos 2009: 87-90), and as a result of their clustering and density, may be eligible for a historic district of such buildings.

There are also numerous warehouses, machine shops, manufacturing plants, offices, ancillary buildings or structures, or company workers' housing built between 1931 and 2006, with built dates clustering between 1931 and 1937, and between 1954 and 1958 (LA County Assessor 2018). The Business Park Zone designated south of Spring Street in the southeastern portion of the Plan Area has a similar condition, as the buildings associated with the airport in this area are built prior to 1947 (FAS 1947; Sanborn 1950a, 1950b).

Furthermore, in the proposed Community Commercial Zone in the northern portion of the Plan Area, retail, commercial, and automotive related buildings range in age from 1949 to 2007, with the majority of the buildings built between 1950 and 1955 and between 1970 and 1973. In the

Community Commercial Zone in the central portion of the Plan Area (centered on Cherry Avenue and East Wardlow Road), structures tended to be built between either between 1950 and 1955 or between 1997 and 2006 (LA County Assessor 2018). In the proposed Industrial Commercial Zone, north and south of Spring Street, commercial industrial buildings tended to have construction dates between 1952 and 2002, with dates clustering between 1952 and 1956 and between 1965 and 1969 (LA County Assessor 2018).

Historic Aerial and Map Analysis

The following historic-era maps and aerial photographs were analyzed to understand the historic development of the area.

Sanborn Fire Insurance Maps

Dudek researched the Sanborn Fire Insurance Maps held by the Los Angeles Public Library's online Sanborn Map Collection on November 8, 2018. Sanborn maps are available for the City of Long Beach as early as 1888. Sanborn maps do not show the Plan Area, however until 1914. The Plan Area in 1914 is just a few blocks within the 1914 city limits of Long Beach and Sanborn Maps did not include detailed block maps for the Plan Area. In 1923, the Southern Area (defined in Chapter 2.3. Environmental Setting) along Spring Street has detailed maps between Walnut Avenue, E. 29th Street, Junipero Avenue, and E. 33rd Street. In 1923, this area is characterized by large, mostly empty lots with oil storage, oil derricks, machine shops, refineries, aircraft manufacturing, military, and airplane storage buildings around the southern portion of the Daugherty Field Airport. Visibly winding its way through all available Sanborn maps for this area is the Union Pacific railroad line, which makes an S-curve near Cherry Avenue between Carson and Spring Streets (Sanborn 1914, 1923).

The next series of Sanborn maps from 1950 show nearly the entire Plan Area, along Cherry Avenue from E. Carson Street to E. Wardlow Road and Cherry Avenue from E. 33rd Street to E. 29th Street. While there is little difference in Southern Area since the 1923 map, in the northern area, along Cherry Avenue south of Carson Street, the west side of Cherry Avenue is dominated by single family homes on evenly sized lots from E. Carson Street to E. Wardlow Road. The east side of the road, is not depicted in Sanborn maps, likely due to this being largely empty Long Beach Airport land (Sanborn 1950a, 1950b).

Aerial Photographs

A review of historic maps and aerial photographs was conducted as part of the archival research effort for the Plan Area via Nationwide Environmental Title Research LLC (NETR) from the years 1953, 1963, 1972, 1994, 2002, 2003, 2004, 2005, 2009, 2010, 2012, and 2014. Aerial imagery was also available from the Map and Imagery Laboratory (MIL) at the University of California, Santa

Barbara from the years 1927, 1933, 1947, 1952, 1956, 1960, 1968, 1970, 1976, 1981, 1994, and 2007. The information obtained from the historic and recent aerial photographs were used in the preparation of the historic context for the project (FAS 1927, 1933, 1947, 1956, 1960; NETR 2018a; PAI 1952; Teledyne Geotronics 1968, 1970, 1976, 1981; Skyview 2007; USGS 1994).

The earliest photograph from 1927 shows that Cherry Avenue was very sparsely developed in the 1920s, consisting mostly of a scattering of residential buildings, and large, manufacturing or oil industry warehouses, Daugherty Field consists of a single row of hangars with small single engine planes on the small paved area just to the north. South of where the Union Pacific rail line crosses, Cherry Avenue is lined with large oil refineries, round footprint storage tanks, and more large warehouses. Photos from 1933 clearly show the Southern Area of the Proposed Project, along Spring Street, in detail multiple oil derricks south of Spring Street in Signal Hill are present as well as some small refineries and storage containers along Spring Street. Notably, Spring Street was paved east of Cherry Avenue, and unpaved west of Cherry Avenue (FAS 1927, 1933).

By the 1947 photograph the California Heights neighborhood, west of Cherry Avenue, had completely filled with residential buildings. Daugherty Field had formalized its airport with hangars along the north side of Spring Street, and an entrance building on N. Lakewood Boulevard. South of E. Wardlow Road, Cherry Avenue is characterized by warehouses and storage buildings, though south of Spring Street there are still plenty of oil and gas industry-related buildings. By 1947, the Union Pacific tracks appeared to not cross major roads, perhaps signaling disuse of this line. Between 1947 and 1956, a drive-in theater appeared at the corner of Carson and Cherry Avenue, and the storage building and medical center located north of Carson Avenue, just east of Cherry Avenue, appeared. (FAS 1947, 1956; PAI 1953).

In the 1960s aerial photographs, the most notable change was on the east side of Cherry Avenue, with the construction of new retail buildings between the Union Pacific rail right-of-way and Cherry Avenue, replacing manufacturing plants and warehouses. Around Spring Street, in the Southern Area and Southeastern Area of the Proposed Project, there were fewer oil derricks, and more storage structures, indicating that the oil industry is moving on to newer oil fields. Between the 1960 and 1965 aerial photographs, Interstate 405 was constructed, bisecting Cherry Avenue near the intersection with E. Spring Street. (Curtis 1965; FAS 1960; Teledyne Geotronics 1968).

The Plan Area remained relatively unchanged through the 1970s and 1980s according to available aerial photographs. Between 1981 and 1994, the drive-in theater at Carson and Cherry Avenue has been abandoned and is growing over with vegetation. In the Southern Area of the Proposed Project, oil and gas storage structures, and warehouses have completely replaced the oil derricks. Retail shopping centers now dominate several street corners along (Teledyne Geotronics 1970, 1976, 1981; USGS 1994).

With the exception of the Lomita Gas Company properties, the major changes in the 2000s are the removal of gas and oil industry storage structures in the Southern Area as early as 2002. They are replaced with mostly retail shopping areas. Retail shopping also replaces buildings in the Northern Area of the Proposed Project, along Cherry Avenue just south of Carson Street (NETR 2018a; Skyview 2007).

Development History for the Cherry Avenue and E. Spring Street Areas

The Plan Area was part of land annexed to Long Beach between 1920 and 1929. Prior to this, the Plan Area originally belonged to the land grant Spanish governor Pedro Fages awarded to Manuel Nieto in 1784. His heirs split Nieto's land grant into six parcels and Manuela Cota, Nieto's daughter, inherited Rancho Los Cerritos, which encompasses much of modern Long Beach. In 1882, the Willmore City was founded and named for land developer William Willmore. By 1888, citizens voted to rename the city Long Beach. Originally, Cherry Avenue was a winding, unpaved road that roughly followed the Union Pacific Railroad tracks and went to the towns of Bixby and Clearwater. The street was originally known as Independence or Independencia Avenue, and eventually became known as Cherry Avenue in roughly 1905 when the land was annexed to the City of Long Beach. According to early topographical maps, the intersection of the Bixby Road and Cherry Avenue, the landscape had few settlements and was dominated by swamp and wetlands. Bouton Lake (formerly Bouton Well), supplied by a large aquifer that still provides City of Lakewood with water today (NETR 2018b; Norton 2017; Polk's 1909, 1914-15; RLCHS 2017; Sapphos 2009).

The Plan Area portion of Cherry Avenue, north of Spring Street was not developed until the 1920s. This coincided with the discovery of oil at Signal Hill in 1921 and the subsequent population and building boom of the 1920s. Because of the discovery of the Long Beach Oil Fields, the ownership, production, and sale of oil became the City's primary economic industry. Although Signal Hill was an unincorporated area within greater Long Beach, most of the benefit went to Long Beach entrepreneurs, which in turn created building booms in downtown and along the shoreline where oil money was reinvested. More oil strikes at Dominguez Hills (1923), and Wilmington Oil Field (1937) spread this wealth around, but oil would remain a major industry in Long Beach for decades to come. (Sapphos 2009).

Development soon stretched north, beyond Signal Hill into the Plan Area. During the early 1920s Cherry Avenue was re-aligned from a winding dirt path to the paved north-south corridor that exists today. While derricks dominated unincorporated Signal Hill, refineries, storage, office spaces, and support industries (derrick manufacturers, welders, vehicles and shipping centers) established along Spring Street and Cherry Avenue that had been annexed to Long Beach. In 1921, the Jotham Bixby Company subdivided a portion of Rancho Los Cerritos to resell as residential lots. Lots in the new California Heights tract came with oil rights, prompting their

swift development in the 1920s and 1930s. In 1923, the City of Long Beach set aside 150 acres at Spring Street and Cherry Avenue for an airfield. This field, named for Earl Daugherty, was developed into the Long Beach Municipal Airport, used both by private and contract pilots as well as the military. In 1928, the City leased more land to build hangars and administrative facilities for the Naval and Army Corps along Spring Street east of Cherry Avenue. In 1929, one of the largest industrial tracts was acquired by the Janss Investment Company of Los Angeles. The property bordered the 380-acre Long Beach Municipal Airport Tract. Immediately a portion of the Janss-owned tract was planned for the development of a large aircraft manufacturer, setting the stage for future aircraft manufacturers such as the Douglas Aircraft Company, to move to Long Beach (Long Beach Airport 2017; NETR 2018b; Norton 2017; Polk's 1914-1915, 1920, 1921, 1923; Sapphos 2009).

The oil boom and the robust 1920s economy caused a great deal of growth and economical security in Long Beach. The Great Depression's effect was felt by 1932, as the demand for oil sharply dropped. The effects of the Depression were short-lived. In March 1933, a 6.4-magnitude earthquake destroyed much of the masonry structures in Long Beach. However, reconstruction using oil money and federal loans and grants lessened the effects of the Depression. By 1935, there were 35 oil manufacturers and oil related manufacturing companies along Cherry Avenue north of Spring Street and South of Carson Street. At nearly the same time, construction of the California Heights residential neighborhood was underway, densely arranged between Wardlow Road and Carson Avenue, west of Cherry Avenue (Polk's 1923, 1926, 1930, 1935, 1940, 1945, 1951-52, 1960; Sapphos 2009).

The local defense industry surrounding the airport boomed during World War II, after the *USS Arizona*, Long Beach's homeport battleship, was lost during the attack on Pearl Harbor. Douglas Aircraft Company, which established an office on American Avenue at the airport in 1940, was a designated production center for war effort military planes during World War II. Long Beach Municipal Airport was put under control of the U.S. Army Air Corps, to operate as an aircraft ferrying depot by which the manufactured planes would get to their destinations. In 1943, Douglas was producing 11 planes a day, or approximately one-sixth of the country's 300,000 new planes, with over half of its workforce consisting of women, known as "Rosie the Riveters." After World War II, Douglas laid off 4,000 employees, mostly women, as veterans returned to the United States, bought homes, started families and settled into civilian life. The G.I. Bill provided low-interest loans and long-term mortgages, leading to an unprecedented residential growth in Long Beach, both in population and size. New subdivisions appeared in Bixby Knolls northwest of the Plan Area and Lakewood northeast of the Plan Area (Denger 2016; Sapphos 2009).

Since World War II, aircraft manufacturers and aircraft related companies have been present on both Cherry Avenue and Lakewood Boulevard to the east. In 1941, Douglas Aircraft Company first established a manufacturing plant near the airport, just off Lakewood Boulevard. In 1967,

McDonnell Aircraft Corporation merged with Douglas Aircraft Company to form McDonnell Douglas. After the merger, McDonnell Douglas built a new plant just east of the Cherry Avenue corridor. In 1996, rival manufacturer Boeing purchased the Douglas plant and manufactured commercial planes there until 2006, and manufactured military planes until the plant was closed in 2015. For over 80 years, the company manufactured planes such as the DC-10, MD-80 jetliner, the B-17 bomber, the B-19 bomber, the C-17 Globemaster III, and Boeing 717 (Long Beach Airport 2017; Peterson 2015; Waldie 2013).

Between 1960 and 1963, construction of the Interstate 405 cut across Cherry Avenue, just north of Spring Street, dividing the oil manufacturing industrial area. The west side of Cherry Avenue between Wardlow Street and Carson Street remained firmly residential. On the east side of Cherry Avenue, many of the lots between the Union Pacific right-of-way and Cherry Avenue became commercial/ industrial buildings (mostly automotive sales or repairs) developed between 1955 and 1969 (LBP 2017; NETR 2018a, 2018b; Polk's 1923, 1960; Sapphos 2009).

3.3.2 Regulatory Setting

Federal

The NHPA established the National Register of Historic Places (NRHP) and the President's Advisory Council on Historic Preservation (ACHP), and provided that states may establish State Historic Preservation Officers (SHPOs) to carry out some of the functions of the NHPA. Most significantly for federal agencies responsible for managing cultural resources, Section 106 of the NHPA directs that:

> [t]he head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the NRHP.

Section 106 also affords the ACHP a reasonable opportunity to comment on the undertaking (16 U.S.C. 470f).

36 Code of Federal Regulations, Part 800 (36 CFR 800) implements Section 106 of the NHPA. It defines the steps necessary to identify historic properties (those cultural resources listed in or eligible for listing in the NRHP), including consultation with federally recognized Native American tribes to identify resources with important cultural values; to determine whether or not

they may be adversely affected by a proposed undertaking; and the process for eliminating, reducing, or mitigating the adverse effects.

The content of 36 CFR 60.4 defines criteria for determining eligibility for listing in the NRHP. The significance of cultural resources identified during an inventory must be formally evaluated for historic significance in consultation with the ACHP and the California SHPO to determine if the resources are eligible for inclusion in the NRHP. Cultural resources may be considered eligible for listing if they possess integrity of location, design, setting, materials, workmanship, feeling, and association.

Regarding criteria A through D of Section 106, the quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, cultural resources, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that:

A. Are associated with events that have made a significant contribution to the broad patterns of our history; or

B. Are associated with the lives of persons significant in our past; or

C. Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. Have yielded or may be likely to yield, information important in prehistory or history [36 CFR 60.4].

The 1992 amendments to the NHPA enhance the recognition of tribal governments' roles in the national historic preservation program, including adding a member of an Indian tribe or Native Hawaiian organization to the ACHP.

The NHPA amendments:

- Clarify that properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization may be determined eligible for inclusion in the National Register
- Reinforce the provisions of the Council's regulations that require the federal agency to consult on properties of religious and cultural importance.

The 1992 amendments also specify that the ACHP can enter into agreement with tribes that permit undertakings on tribal land and that are reviewed under tribal regulations governing Section 106. Regulations implementing the NHPA state that a federal agency must consult with any Indian tribe that attaches religious and cultural significance to historic properties that may be affected by an undertaking.

Integrity

Integrity is defined in NRHP guidance, *How to Apply the National Register Criteria,* as "the ability of a property to convey its significance. To be listed in the NRHP, a property must not only be shown to be significant under the NRHP criteria, but it also must have integrity" (NPS 1990). NRHP guidance further asserts that properties be completed at least 50 years ago to be considered for eligibility. Properties completed fewer than 50 years before evaluation must be proven to be "exceptionally important" (criteria consideration G) to be considered for listing.

Antiquities Act of 1906

The Antiquities Act of 1906 is used as the basis for federal protection of paleontological resources on federal lands. The act authorizes the government to regulate the disturbance of objects of antiquity on federal lands and is the first federal legislative protection of paleontological resources. The act forbids unauthorized damage or removal of such objects and also establishes criminal permissions for unauthorized appropriation or destruction of antiquities.

Federal Land Management and Policy Act

The Federal Land Management and Policy Act (FLMPA) of 1976 recognizes significant paleontological resources as scientific resources and requires Federal agencies to manage public lands in a manner that protects scientific resource quality.

State

California Register of Historical Resources (CRHR)

In California, the term "historical resource" includes but is not limited to "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California." (PRC section 5020.1(j).) In 1992, the California legislature established the CRHR "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change." (PRC section 5024.1(a).) The criteria for listing resources on the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the NRHP, enumerated below. According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

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

(2) Is associated with the lives of persons important in our past.

(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

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

In order to understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than fifty years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see Cal. Code Regs., tit. 14, section 4852(d)(2)).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are the state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

California Environmental Quality Act

As described further below, the following CEQA statutes and CEQA Guidelines are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

- PRC section 21083.2(g) defines "unique archaeological resource."
- PRC section 21084.1 and CEQA Guidelines section 15064.5(a) defines "historical resources." In addition, CEQA Guidelines section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource;" it also defines the circumstances when a project would materially impair the significance of an historical resource.
- PRC section 21074(a) defines "tribal cultural resources."
- PRC section 5097.98 and CEQA Guidelines section 15064.5(e): Set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
- PRC sections 21083.2(b)-(c) and CEQA Guidelines section 15126.4: Provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures; preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context, and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

More specifically, under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource." (PRC section 21084.1; CEQA Guidelines section 15064.5(b).) If a site is either listed or eligible for listing in the CRHR, or if it is included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC section 5024.1(q)), it is a "historical resource" and is presumed to be historically or culturally significant for purposes of CEQA. (PRC section 21084.1; CEQA Guidelines section 15064.5(a).) The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption. (PRC section 21084.1; CEQA Guidelines section 15064.5(a).)

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired." (CEQA Guidelines section 15064.5(b)(1); PR Code section 5020.1(q).) In turn, the significance of an historical resource is materially impaired when a project:

> (1) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
>
> (2) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
>
> (3) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA.

(CEQA Guidelines section 15064.5(b)(2).) Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any "historical resources," then evaluates whether that project will cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance is materially impaired.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be

preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (Section 21083.2[a], [b], and [c]).

Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Impacts to non-unique archaeological resources are generally not considered a significant environmental impact (PRC section 21083.2(a); CEQA Guidelines section 15064.5(c)(4).) However, if a non-unique archaeological resource qualifies as tribal cultural resource (PRC 21074(c); 21083.2(h)), further consideration of significant impacts is required.

California Health and Safety Code

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the County coroner has examined the remains (section 7050.5b). PRC Section 5097.98 also outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the California Native American Heritage Commission (NAHC) within 24 hours (section 7050.5c). The NAHC will notify the Most Likely Descendant. With the permission of the landowner, the Most Likely Descendant may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the Most Likely Descendant by the NAHC. The Most Likely Descendant may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

Local

Historic Preservation Element (2010)

The City's General Plan Historic Preservation Element (2010) provides a framework for the review, treatment, and preservation of historic resources in the City. Following are the main strategies and policies from the Historic Preservation Element that are related to cultural resources.

Goal 1: Maintain and support a comprehensive, citywide historic preservation program to identify and protect Long Beach's historic, cultural, and archaeological resources.

> **P.1.1** The City shall comply with City, State, and Federal historic preservation regulations to ensure adequate protection of the City's cultural, historic, and archaeological resources.

Goal 2: Protect historic resources from demolition and inappropriate alterations through the use of the City's regulatory framework, technical assistance, and incentives.

City of Long Beach Landmarks and Landmark Districts (Chapter 2.63.050)

The City of Long Beach adopted their Cultural Heritage Commission Ordinance (Title 2, Chapter 2.63) in 1992 and amended it in 2005, 2009, and most recently in 2015 (ORD-15-0038) (City of Long Beach 2015). The new code condensed the original thirteen criteria down to six criteria for designation of a City Landmark or Landmark District, and closely aligns with NRHP and CRHR Criteria. The City of Long Beach designates local landmarks and landmark districts by nominating a proposed district, and submitting it for review to the Cultural Heritage Commission. The Cultural Heritage Commission shall review and make a recommendation to the City Council based on findings of act pertaining to the designation criteria. The City Council considers the Cultural Heritage Commission's recommendation at a public hearing and will either approve or disapprove the proposed designation by ordinance (2.63.060 subsection A and B).

Landmarks. A cultural resource qualifies for designation as a Landmark if it retains integrity and manifests one (1) or more of the following criteria:

A. It is associated with events that have made a significant contribution to the broad patterns of the City's history; or

B. It is associated with the lives of persons significant in the City's past; or

C. It embodies the distinctive characteristics of a type, period or method of construction, or it represents the work of a master or it possesses high artistic values; or

D. It has yielded, or may be likely to yield, information important in prehistory or history.

Landmark Districts. A group of cultural resources qualify for designation as a Landmark District if it retains integrity as a whole and meets the following criteria:

A. The grouping represents a significant and distinguishable entity that is significant within a historic context.

B. A minimum of sixty percent (60%) of the properties within the boundaries of the proposed landmark district qualify as a contributing property.

The City ordinance does not place any specific age or integrity requirements on historic resources. The ordinance also allows for the nomination of churches, cemeteries, and resources that have been moved from their original location.

3.3.3 Thresholds of Significance

The following significance criteria are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.), and will be used to determine the significance of potential cultural resource impacts. Impacts related to cultural resources would be significant if the Proposed Project would:

A. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines.

B. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines.

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

The IS found that the Proposed Project would have a potentially significant impact as it relates to cultural resources (Appendix A-1). As such, all impacts will be addressed further in this Draft PEIR/ PEIS.

3.3.4 Impacts Analysis

The City has developed the GCSP as part of a comprehensive transition program in the wake of the closure of the C-17 Globemaster military aircraft production facility owned by the Boeing Corporation (C-17 Site). The GCSP will build upon the previously developed C-17 Transition Master Plan and provide a strategic planning framework for attracting quality industries and improving the character, design, and functionality of the Plan Area. The Proposed Project involves the implementation of the GCSP, which serves as a planning and regulatory framework for the Plan Area and would guide land uses for the approximately 437 acres. The following section outlines potential impacts for cultural resources related to implementation of the Proposed Project.

a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines?

Only one previously recorded historical resource was located within the Plan Area. The Termo Company Building at 3275 Cherry Avenue is a locally designated Long Beach Landmark (City of Long Beach 16.52.290), built in 1935, and as such, it is considered a historical resource for the purposes of CEQA. The Proposed Project will result in rezoning portions of the Plan Area and allow for project-level design plans that will include street improvements to existing roadways and planned neighborhood connectors. The Termo Company Building at 3275 Cherry Avenue is within the area to be rezoned as a "General Industrial" district." As rezoning the property will not result in a direct or indirect impact to the resource, the Proposed Project will not cause a substantial adverse change in the significance of a historical resource as defined in State CEQA Guidelines Section 15064.5. Any future project that would potentially result in the modification and/or removal of this locally designated historic landmark would be subject compliance with Chapter 2.63 (Cultural Heritage Commission) and Section 16.52.290 (The Termo Company Building.) of the Municipal Code related to the preservation of designated historic properties. Mitigation measure **MM-CUL-1** would require future project proponents to ensure that potential impacts to historical resources be assessed at the project level, and that properties 45 years old or older be evaluated for historical significance prior to initiation of any project-related activities that could result in the identification of significant impacts to historic properties.

Subsequent future projects that could be implemented as a result of the GCSP could potentially impact previously-recorded CEQA historical resources and those properties that contain buildings and structures 45 years old or older that have not been identified. Types of projects which constitute a substantial adverse change in the significance of a historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired (State CEQA Guidelines Section 15064.5). Archival research, including historic map and historic aerial overview, county assessor data, and the City of Long Beach Historic Context Statement, indicates that the Plan Area contains many properties that meet the 45-year threshold and these properties should be further studied for potential impacts to historical resources in the event they are included in a future project.

This programmatic project is specifically planning and rezoning for the Plan Area. No ground-disturbing project-level activities are proposed as part of the Proposed Project, and therefore, no impacts to historical resources are anticipated. However, with the re-zoning and design plans proposed for the Plan Area, construction will likely occur in the future.

As summarized above, there are known historical resources in the Plan Area and the potential for more properties that have not been evaluated and could be CEQA historical resources. In particular, the Plan Area includes resources that are recently reaching 45 years or more of age and are associated with periods of Long Beach history and not fully documented in the Historic Context Statement. Preservation of these modern buildings may not be feasible or consistent with the goals of the GCSP. Furthermore, as these resources are not listed, may be eligible for local listing but not the state or national register, impacts under CEQA will differ from NEPA. Consequently, these future activities could result in significant impacts to CEQA historical resources in the Plan Area.

CEQA Impact Determination

Implementation of mitigation measure **MM-CUL-1**, requires future project proponents to ensure that potential impacts to historical resources be assessed at the project level. This includes project review by a qualified architectural historian to assess the potential impacts to known and potential CEQA historical resources. If project implementation could result in impacts, than a Historic Resource Evaluation Report will need to be prepared by a qualified architectural historian for the specific project to verify if any CEQA historical resources are could be impacted by the Proposed Project. Development under the proposed GCSP has a potential for demolishing structures that are eligible for historic significance. Preservation of historic-age buildings may not be feasible or consistent with the goals of the GCSP.

In the event, a future development proposal could result in the demolition of a historical resource, the inclusion of mitigation measure **MM-CUL-2** would ensure that the historic structure is documented pursuant to the guidelines of Historic American Building Survey (HABS)-level III. This documentation would be prepared by a qualified professional in the field. Due to the potential loss of historic age structures with implementation of the GCSP, significant impacts would remain after the incorporation of identified mitigation. As such, impacts would be **significant and unavoidable** under CEQA.

NEPA Impact Determination

Implementation of mitigation measure **MM-CUL-1**, which requires future project proponents to ensure that potential impacts to historical resources be assessed at the project level, and that properties 45 years old or older be evaluated for historical significance prior to initiation of any project-related activities that could result in the identification of significant impacts to historic properties. The adoption of the GCSP would not result in direct impacts to historic resources, but the implementation of future projects would potentially result in adverse effects on historic-age structures. Project-level analyses

included in mitigation measure **MM-CUL-1** would ensure that historic resources are identified consistent with 36 CFR 60.4, which defines criteria for determining eligibility for listing in the NRHP. The significance of historic resources identified during an inventory must be formally evaluated for historic significance in consultation with the ACHP and the California SHPO to determine if the resources are eligible for inclusion in the NRHP. Cultural resources may be considered eligible for listing if they possess integrity of location, design, setting, materials, workmanship, feeling, and association.

Preservation of historic-age buildings may not be feasible or consistent with the goals of the GCSP. As noted above, mitigation measure **MM-CUL-2** would ensure that the historic structure is documented pursuant to the guidelines of HABS-level III prior to demolition. The determination of eligibility and treatment of resources would be consistent with the Section 106 process. It is anticipated that due to differences in eligibility criteria, any unlisted resources may be eligible for local listing but not be eligible for the national register, however final determinations will be based project-level analysis. The potential for loss of historic resources under the implementation of the GCSP would potentially result in future **adverse effects** under NEPA.

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

A CHRIS records search was conducted for the Plan Area and a 0.5-mile radius study area. No archaeological resources were identified within the Plan Area as a result of the CHRIS records search or NAHC SLF search. It is always possible that unanticipated discoveries could be encountered during ground-disturbing activities associated with implementation of future projects under the Proposed Project. If such unanticipated discoveries were encountered, impacts to encountered resources could be potentially significant.

CEQA Impact Determination

With the implementation of mitigation measure **MM-CUL-3**, all construction work occurring within 100 feet of a find would be required to immediately stop until a qualified archaeologist (meeting the Secretary of the Interior's Professional Qualification Standards for Archaeology) can evaluate the significance of the find. Additionally, the implementation of mitigation measures **MM-TCR-1** through **MM-TCR-9** (see Section 3.12 Tribal Cultural Resources of this Draft PEIR/PEIS), which identifies the City's standard monitoring guidance for ground disturbance activities, will further ensure impacts to archaeological resources is less than significant. As such, potentially significant impacts to archaeological resources would be reduced to less than significant levels. Impacts would be **less than significant with mitigation incorporated** under CEQA.

NEPA Impact Determination

With the implementation of mitigation measure **MM-CUL-3**, all construction work occurring within 100 feet of a find would be required to immediately stop until a qualified archaeologist (meeting the Secretary of the Interior's Professional Qualification Standards for Archaeology) can evaluate the significance of the find. Additionally, the implementation of mitigation measures **MM-TCR-1** through **MM-TCR-9** (see Section 3.12 Tribal Cultural Resources of this Draft PEIR/PEIS), which identifies the monitoring guidance for ground disturbance activities, will further ensure impacts to archaeological resources is less than significant. As such, potentially significant effects to archaeological resources would be reduced to less than significant levels. As such, there would be **no adverse effect** under NEPA.

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

No prehistoric or historic burials were identified within the Plan Area as a result of the records search. However, the possibility of encountering human remains within the Plan Area exists. The discovery of human remains would require handling in accordance with PRC 5097.98, which states that in the event that human remains are discovered during construction, construction activity shall be halted and the area shall be protected until consultation and treatment can occur as prescribed by law. In the unexpected event that human remains are unearthed during construction activities, impacts could be potentially significant.

CEQA Impact Determination

With the implementation of mitigation measure **MM-CUL-4**, which identifies the guidance and protocol for handling the inadvertent discovery of human remains, impacts would not be significant. Impacts would be **less than significant with mitigation incorporated** under CEQA.

NEPA Impact Determination

With the implementation of mitigation measure **MM-CUL-4**, which identifies the guidance and protocol for handling the inadvertent discovery of human remains, effects would not be significant. As such, there would be **no adverse effects** under NEPA.

3.3.5 Cumulative Impacts

Cumulative impacts on cultural resources consider whether the impacts of the Proposed Project together with other related projects substantially diminish the number of historic or archeological resources within the same or similar context or property type. However, impacts to cultural

resources, if any exist, tend to be site-specific. There is one documented historic resource within the Plan Area; one documented historic district immediately adjacent to the Plan Area; and several unevaluated resources that meet the 45-year age threshold for CEQA which may be eligible for inclusion on the national, state, or local register as individual resources or as contributors to historic districts, as outlined by the City of Long Beach Historic Context Statement, for their association with the Oil Industry Subtheme (1921-1945) (Sapphos 2009: 82-87), or the Aerospace Industry Subtheme (Sapphos 2009: 87-90).

The cultural resources that are potentially affected by the related projects would also be subject to the same requirements of CEQA as the Proposed Project, and as such, any impacts would be mitigated, as applicable. These determinations would be made on a case-by-case basis, and the effects of cumulative development on historical resources would be mitigated to the extent feasible in accordance with CEQA and other applicable legal requirements. While the potential for demolition of historic-age properties (45 years or older) would occur with buildout of the GCSP, not all structures within the Plan Area over 45 years of age would meet the eligibility requirements for designation as a historic resource. The majority of structures are likely not eligible for listing in the CRHR and/or the NRHP. With the implementation of mitigation measure **MM-CUL-1**, property eligibility will be determined on a project-level basis. Therefore, while implementation of the GCSP could result in the potential for demolition of historic-age structures, this impact would not represent a cumulative impact because mitigation measure **MM-CUL-1** requires analysis on a project-level basis and there are few existing designated historic resources within the plan area that would be demolished without further environmental analysis. While the possibility exists for unlisted but eligible for local listing resources to be demolished, there is no historic landmark district or grouping of structures eligible for consideration as a district within the boundaries of the GCSP. Therefore, there is no cumulative impact from the loss of individual resources or any group of resources. Each loss of individual resources is potentially significant and therefore no additional cumulative impact exists beyond those individual impacts. Existing designated historic districts, contributing properties in historic districts, and landmark buildings would be protected under the provisions of the Municipal Code related to historic preservation.

Mitigation measures have been identified to reduce potential impacts related to the unanticipated discovery of archaeological resources and human remains. The cumulative impacts on cultural resources would be **less than significant with mitigation incorporated** (mitigation measures **MM-CUL-1** through **MM-CUL-4** and **MM-TCR-1** through **MM-TCR-9** (see Section 3.12, Tribal Cultural Resources, of this Draft PEIR/PEIS).

3.3.6 Mitigation Measures

The following mitigation measures would reduce potentially significant impacts to cultural resources (historic era-built environment and archaeological) and human remains to a less-than-

significant level. Additionally, the implementation of mitigation measures **MM-TCR-1** through **MM-TCR-9** (see Section 3.12 Tribal Cultural Resources of this Draft PEIR/PEIS), which identifies monitoring guidance for ground disturbance activities, will further ensure impacts to archaeological resources is less than significant.

MM-CUL-1 Project Level Analysis of Historic Era Built Environment Resources. Implementation of the Proposed Project (re-zoning and design plans within the Globemaster Corridor Specific Plan area) will likely result in the development of plans for future project-level activities that involve construction and ground disturbing activities within the Globemaster Corridor Specific Plan area. As such, future projects involving these types of activities could constitute a substantial adverse change in the significance of a historical resource by means of physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings, such that the significance of a historical resource would be materially impaired (State CEQA Guidelines Section 15064.5). To mitigate the potential impacts of future projects developed under the Globemaster Corridor Specific Plan, prospective project developers and/or stakeholders shall be required to ensure that potential impacts to historical resources be assessed as part of planning and environmental clearance for their individual project(s).

Prior to the initiation of any construction and/or ground disturbing activities, the Proposed Project will require review by a qualified architectural historian to assess the potential impacts to known and potential CEQA historical resources. If project implementation could result in impacts, than a Historic Resource Evaluation Report will need to be prepared by a qualified architectural historian for the specific project to verify if any CEQA historical resources could be impacted by the Proposed Project. This subsequent identification and impact analysis, including consideration of previously identified historical resources and evaluation of buildings and structures over 45 years old for historical significance in accordance with the guidance of the State of California Office of Historic Preservation (OHP), shall be conducted.

In addition, a historical evaluation of the project level impacts (direct or indirect) at the following sites shall be analyzed in accordance with OHP guidance prior to the approval of future project entitlements:

1. Fire Station No. 14, 1838 E. Wardlow Road (APN: 7148-020-024), constructed in 1941
2. 3341 Cherry Avenue (APN: 7148-020-021), constructed in 1933
3. 3275 Cherry Avenue (APN: 7148-020-009), constructed in 1929

4. 3249 Cherry Avenue (APN: 7148-020-010), constructed in 1929
5. 3170 Cherry Avenue (APN: 7149-006-047), constructed in 1940
6. 3204 Cherry Avenue (APN: 7149-006-045), constructed in 1933
7. 3252 Cherry Avenue (APN: 7149-006-042), constructed in 1937
8. 3254 Cherry Avenue (APN: 7149-006-062), constructed in 1937
9. 3366 Cherry Avenue (APN: 7149-006-035), constructed in 1937
10. 3431 Cherry Avenue (APN: 7147-026-017), constructed in 1947
11. Inglesia Católica Santisimo Sacramento, 1900 E. Carson Street (APN: 7137-013-001), constructed in 1942
12. California Heights Baptist Church, 4110 Gardenia Avenue (APN: 7137-012-009), constructed in 1947

A qualified architectural historian, meeting the Secretary of the Interior's Professional Qualification Standards, shall conduct all work related to the preparation of historic resource evaluation reports, impact analyses, mitigation recommendations (if deemed necessary), and/or subsequent technical reports, should the proposed construction and implementation of future individual projects under the Globemaster Corridor Specific Plan result in potential impacts to CEQA historical resources. If HRE report results indicate that the project will not result in impacts to CEQA historical resources than no further documentation will be required and the impact for the Proposed Project will likely be no impact or less than significant. If the HRE identifies the presence of CEQA historical resources and impacts cannot be avoided through project redesign or relocation than implementation of mitigation measure **MM-CUL-2** will need to be implemented. It is important to note that demolition of a CEQA historical resource cannot be mitigated to less-than-significant. Still, mitigation measure **MM-CUL-2** would apply.

MM-CUL-2 **Project Level Mitigation Alternatives.** In consultation with the Planning Bureau of the Long Beach Development Services Department, prior to the approval of a project level that will result in a significant and unavoidable impact toa historic resource under CEQA, mitigation will be required. Mitigation should be developed by an historic qualified historic preservation specialist or architectural historian based on individual resource historic significance to help ensure that the mitigation addresses what is significant about the resource. A range of mitigation options are available including but not limited to development of interpretive materials, salvage of historic materials, or documentation of the buildings and structures proposed for

demolition that follows the general guidelines of Historic American Building Survey (HABS)-level III documentation. All mitigation needs to be initiated prior to project construction and completed prior to project completion, HABS documentation, which is a common form of mitigation for CEQA historical resources, shall include high resolution digital photographic recordation, a historic narrative report, and compilation of historic research. The documentation shall be completed by a qualified professional who meets the standards for history, architectural history, or architecture as set forth by the Secretary of the Interior's Professional Qualification Standards (36 CFR, Part 61). The original archival-quality documentation shall be offered as donated material to the to South Central Coastal Information Center (SCCIC), Billie Jean King Main Library, and Historical Society of Long Beach to make it available for current and future generations. Archival copies of the documentation also would be submitted to the City of Long Beach Department of Development Services, where it would be available to local researchers. The documentation reports shall be completed and approved by the City of Long Beach prior to the issuance of demolition permits

MM-CUL-3 **Inadvertent Discovery of Archaeological Resources.** In the event that archaeological resources (sites, features, or artifacts) are exposed during future construction activities, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, and tribal monitor/consultant approved by the Gabrieleño Band of Mission Indians-Kizh Nation can evaluate the significance of the find and determine whether or not additional study is warranted. Depending upon the significance of the find under CEQA (14 CCR 15064.5(f); PRC Section 21082), work may continue on other parts of the project while evaluation and, if necessary, additional protective mitigation takes place. If the discovery proves significant under CEQA, additional work, such as preparation of an archaeological treatment plan, testing, or data recovery may be warranted.

MM-CUL-4 **Inadvertent Discovery of Human Remains.** In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found during future construction activities, the County Coroner shall be immediately notified of the discovery. No further excavation or disturbance of the Plan Area or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined, within two working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the County Coroner determines that the remains are, or are believed to be, Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission (NAHC) and Public Resource Code 5097.98 shall be followed. In

accordance with California Public Resources Code, Section 5097.98, the NAHC must immediately notify those persons it believes to be the most likely descendant from the deceased Native American. The most likely descendant shall complete their inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.

3.3.7 Significant After Mitigation

With implementation of mitigation measures **MM-CUL-1** and **MM-CUL-2**, impacts would be reduced but remain significant and unavoidable with the potential for the demolition or loss of properties over 45 years of age. Implementation of mitigation measures **MM-CUL-3** and **MM-CUL-4**, in addition to mitigation measures **MM-TCR-1 through MM-TCR-9** (see Section 3.12 Tribal Cultural Resources of this Draft PEIR/PEIS), would ensure potential impacts to unanticipated discoveries or tribal cultural resources are **less than significant**.

Implementation of mitigation measure **MM-CUL-1** would provide for the preparation of historic resource studies to evaluate impacts of future projects in the Plan Area. However, while mitigation measure **MM-CUL-1** would identify the eligibility of historic-age properties, the City of Long Beach has determined, due to the age of the existing buildings in the Plan Area, most of the built environment is more than 45 years in age and potentially qualify as historic resources under CEQA. The eventual development of the Plan Area would potentially result in a loss of historic-age buildings. Therefore, the potential for this loss cannot be mitigated to a less than significant level by this mitigation alone, and this impact remains significant and unavoidable. Chapter 4.0, Alternatives, considers alternatives, including the No Build Alternative.

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3.4 GREENHOUSE GAS EMISSIONS

This section identifies associated regulatory requirements, describes the existing setting related to climate change and greenhouse gases (GHGs), and evaluates potentially adverse impacts related to GHG emissions during construction and operation of the proposed Globemaster Corridor Specific Plan (GCSP; Proposed Project). Modeling data and information related to the GHG emissions analysis have been provided in Appendix B-1, Emission Calculations.

The Initial Study (IS) and Notice of Preparation (NOP) are contained in Appendix A-1, Initial Study; and Appendix A-2, Notice of Preparation, respectively. Comments regarding GHGs, received in response to the NOP (see Appendix A-3, Notice of Preparation Comment Letters), specifically related to reducing vehicle miles traveled (VMT) and preparation of the analysis consistent with the South Coast Air Quality Management District's (SCAQMD's) guidance, were received during the scoping process, and have been considered in the preparation of the analyses presented in this section.

The IS found that the Proposed Project would have potentially significant impacts as it relates to GHG emissions (Appendix A-1). As such, all potential GHG emissions impacts are addressed in this Draft Program Environmental Impact Report (PEIR)/Draft Program Environmental Impact Statement (PEIS).

3.4.1 Existing Conditions

3.4.1.1 Climate Change Overview

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

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

The scientific record of the Earth's climate shows that the climate system varies naturally over a wide range of time scales and that, in general, climate changes prior to the Industrial Revolution in the 1700s can be explained by natural causes, such as changes in solar energy, volcanic eruptions, and natural changes in GHG concentrations. Recent climate changes, in particular the warming observed over the past century, however, cannot be explained by natural causes alone. Rather, it is extremely likely that human activities have been the dominant cause of that warming since the mid-twentieth century and is the most significant driver of observed climate change (Intergovernmental Panel on Climate Change (IPCC) 2013; EPA 2017a). Human influence on the climate system is evident from the increasing GHG concentrations in the atmosphere, positive radiative forcing, observed warming, and improved understanding of the climate system (IPCC 2013). The atmospheric concentrations of GHGs have increased to levels unprecedented in the last 800,000 years, primarily from fossil fuel emissions and secondarily from emissions associated with land use changes (IPCC 2013). Continued emissions of GHGs will cause further warming and changes in all components of the climate system, which is discussed further in Section 3.4.1.5, Potential Effects of Climate Change.

3.4.1.2 Greenhouse Gases

A GHG is any gas that absorbs infrared radiation in the atmosphere; in other words, GHGs trap heat in the atmosphere. As defined in California Health and Safety Code section 38505(g) for purposes of administering many of the state's primary GHG emissions reduction programs, GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3) (see also 14 CCR 15364.5).[1] Some GHGs, such as CO_2, CH_4, and N_2O, are emitted into the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Manufactured GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as HFCs, PFCs, and SF_6, which are associated with certain industrial products and processes. The following paragraphs provide a summary of the most common GHGs and their sources.[2]

Carbon Dioxide. CO_2 is a naturally occurring gas and a by-product of human activities and is the principal anthropogenic GHG that affects the Earth's radiative balance. Natural sources of CO_2 include respiration of bacteria, plants, animals, and fungus; evaporation from oceans; volcanic out-

[1] Climate forcing substances include GHGs and other substances such as black carbon and aerosols. This discussion focuses on the seven GHGs identified in the California Health and Safety Code Section 38505, because impacts associated with other climate forcing substances are not evaluated herein.

[2] The descriptions of GHGs are summarized from the Intergovernmental Panel on Climate Change's Second Assessment Report and Fourth Assessment Report (IPCC 1995, 2007), CARB's Glossary of Terms Used in GHG Inventories (CARB 2018), and EPA's Glossary of Climate Change Terms (EPA 2016).

gassing; and decomposition of dead organic matter. Human activities that generate CO_2 are from the combustion of fuels such as coal, oil, natural gas, and wood and changes in land use.

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

Nitrous Oxide. N_2O is produced through natural and human activities, mainly through agricultural activities and natural biological processes, although fuel burning and other processes also create N_2O. Sources of N_2O include soil cultivation practices (microbial processes in soil and water), especially the use of commercial and organic fertilizers, manure management, industrial processes (such as in nitric acid production, nylon production, and fossil-fuel-fired power plants), vehicle emissions, and using N_2O as a propellant (such as in rockets, racecars, and aerosol sprays).

Fluorinated Gases. Fluorinated gases (also referred to as F-gases) are synthetic powerful GHGs emitted from many industrial processes. Fluorinated gases are commonly used as substitutes for stratospheric ozone-depleting substances (e.g., CFCs, HCFCs, and halons). The most prevalent fluorinated gases include the following:

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

Chlorofluorocarbons. CFCs are synthetic chemicals that have been used as cleaning solvents, refrigerants, and aerosol propellants. CFCs are chemically unreactive in the lower atmosphere (troposphere) and the production of CFCs was prohibited in 1987 due to the chemical destruction of stratospheric O_3.

Hydrochlorofluorocarbons. HCFCs are a large group of compounds, whose structure is very close to that of CFCs—containing hydrogen, fluorine, chlorine, and carbon atoms—but including one or more hydrogen atoms. Like HFCs, HCFCs are used in refrigerants and propellants. HCFCs were also used in place of CFCs for some applications; however, their use in general is being phased out.

Black Carbon. Black carbon is a component of fine particulate matter, which has been identified as a leading environmental risk factor for premature death. It is produced from the incomplete combustion of fossil fuels and biomass burning, particularly from older diesel engines and forest fires. Black carbon warms the atmosphere by absorbing solar radiation, influences cloud formation, and darkens the surface of snow and ice, which accelerates heat absorption and melting. Black carbon is a short-lived species that varies spatially, which makes it difficult to quantify the global warming potential. Diesel particulate matter emissions are a major source of black carbon and are TACs that have been regulated and controlled in California for several decades to protect public health. In relation to declining diesel particulate matter from the California Air Resources Board's (CARB's) regulations pertaining to diesel engines, diesel fuels, and burning activities, CARB estimates that annual black carbon emissions in California have reduced by 70% between 1990 and 2010, with 95% control expected by 2020 (CARB 2014).

Water Vapor. The primary source of water vapor is evaporation from the ocean, with additional vapor generated by sublimation (change from solid to gas) from ice and snow, evaporation from other water bodies, and transpiration from plant leaves. Water vapor is the most important, abundant, and variable GHG in the atmosphere and maintains a climate necessary for life.

Ozone. Tropospheric O_3, which is created by photochemical reactions involving gases from both natural sources and human activities, acts as a GHG. Stratospheric O_3, which is created by the interaction between solar ultraviolet radiation and molecular oxygen (O_2), plays a decisive role in the stratospheric radiative balance. Depletion of stratospheric O_3, due to chemical reactions that may be enhanced by climate change, results in an increased ground-level flux of ultraviolet-B radiation.

Aerosols. Aerosols are suspensions of particulate matter in a gas emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light.

3.4.1.3 Global Warming Potential

Gases in the atmosphere can contribute to climate change both directly and indirectly. Direct effects occur when the gas itself absorbs radiation. Indirect radiative forcing occurs when chemical transformations of the substance produce other GHGs, when a gas influences the atmospheric lifetimes of other gases, and/or when a gas affects atmospheric processes that alter the radiative balance of the Earth (e.g., affect cloud formation or albedo) (EPA 2016a). The Intergovernmental Panel on Climate Change (IPCC) developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of 1 kilogram of a trace substance relative to that of 1 kilogram of a reference gas (IPCC 2014). The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in metric tons of CO_2 equivalent (MT CO_2e).

The current version of the California Emissions Estimator Model (CalEEMod) (Version 2016.3.2) assumes that the GWP for CH_4 is 25 (so emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2), and the GWP for N_2O is 298, based on the Intergovernmental Panel on Climate Change's Fourth Assessment Report (IPCC 2007). The GWP values identified in CalEEMod were applied to the Proposed Project.

3.4.1.4 Sources of Greenhouse Gas Emissions

Per the Environmental Protection Agency (EPA) Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2018 (EPA 2020), total United States GHG emissions were approximately 6,676.6 MMT CO_2e in 2018 (EPA 2020). The primary GHG emitted by human activities in the United States was CO_2, which represented approximately 81.3% of total GHG emissions (5,428.1 MMT CO_2e). The largest source of CO_2, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 92.8% of CO_2 emissions in 2018 (5,031.8 MMT CO_2e). Relative to 1990, gross United States GHG emissions in 2018 are higher by 3.7%, down from a high of 15.2% above 1990 levels in 2007. GHG emissions decreased from 2017 to 2018 by 2.9% (188.4 MMT CO_2e) and overall, net emissions in 2018 were 10.2% below 2005 levels (EPA 2020).

According to California's 2000–2017 GHG emissions inventory (2019 edition), California emitted 424 MMT CO_2e in 2017, including emissions resulting from out-of-state electrical generation (CARB 2019). The sources of GHG emissions in California include transportation, industry, electric power production from both in-state and out-of-state sources, residential and commercial activities, agriculture, high GWP substances, and recycling and waste. The California GHG emission source categories and their relative contributions in 2017 are presented in Table 3.4-1, Greenhouse Gas Emissions Sources in California.

Table 3.4-1
Greenhouse Gas Emissions Sources in California

Source Category	Annual GHG Emissions (MMT CO_2e)	Percent of Total[a]
Transportation	169.86	40%
Industrial	89.40	21%
Electric power[b]	62.39	15%
Agriculture	32.42	8%
Residential	26.00	6%
Commercial	15.14	4%
High global-warming potential substances	19.99	5%
Recycling and waste	8.89	2%
Total	**424.10**	**100%**

Source: CARB 2018b.
Notes: GHG = greenhouse gas; MMT CO_2e = million metric tons of carbon dioxide equivalent.
Emissions reflect the 2017 California GHG inventory.
[a] Percentage of total has been rounded, and total may not sum due to rounding.
[b] Includes emissions associated with imported electricity, which account for 23.94 MMT CO_2e annually.

Between 2000 and 2017, per-capita GHG emissions in California have dropped from a peak of 14.1 MT per person in 2001 to 10.7 MT per person in 2017, representing a 24% decrease. In addition, total GHG emissions in 2017 were approximately 5 MMT CO_2e less than 2016 emissions (CARB 2019).

As part of preparing the City's Climate Action and Adaptation Plan (CAAP), the City developed a baseline GHG emissions inventory for the year 2015. As shown in Table 3.4-2, City of Long Beach 2015 Greenhouse Gas Inventory, below, the City's 2015 total emissions were 3.1 MMT of CO_2e with the majority coming from transportation (50%) and building energy use (44%); the remaining 6% comes from solid waste and wastewater.

Table 3.4-2
City of Long Beach 2015 Greenhouse Gas Inventory

Sector	MT CO_2e	Percent of Total[a]
Energy	1,377,291	44%
Residential	*428,245*	*14%*
Commercial	*300,818*	*10%*
Manufacturing/Construction	*399,089*	*13%*
Energy Industries	*219,889*	*7%*
Fugitive Emissions (oil/natural gas)	*29,240*	*1%*
Transportation	1,546,326	50%
On-road transportation	*1,213,601*	*39%*
Railways	*11,883*	*<1%*
Waterborne Navigation	*301,345*	*10%*
Aviation	*4,550*	*<1%*
Off-road Transportation	*14,947*	*<1%*

Table 3.4-2
City of Long Beach 2015 Greenhouse Gas Inventory

Sector	MT CO_2e	Percent of Total[a]
Waste	176,851	6%
Solid Waste	*173,259*	*6%*
Wastewater	*3,592*	*<1%*
Total	**3,100,468**	**100%**

Source: City of Long Beach 2019a.
Notes: GHG = greenhouse gas; MT CO_2e = metric tons of carbon dioxide equivalent.
[a] Percentage of total has been rounded, and total may not sum due to rounding.

3.4.1.5 Potential Effects of Climate Change

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

In California, climate change impacts have the potential to affect sea-level rise, agriculture, snowpack and water supply, forestry, wildfire risk, public health, frequency of severe weather events, and electricity demand and supply. The primary effect of global climate change has been a rise in average global tropospheric temperature. Reflecting the long-term warming trend since pre-industrial times, observed global mean surface temperature for the decade 2006–2015 was 0.87°C (likely between 0.75°C and 0.99°C) higher than the average over the 1850–1900 period (IPCC 2018). Scientific modeling predicts that continued emissions of GHGs at or above current rates would induce more extreme climate changes during the twenty-first century than were observed during the twentieth century. Human activities are estimated to have caused approximately 1.0°C (1.8 degrees Fahrenheit (°F)) of global warming above pre-industrial levels, with a likely range of 0.8°C to 1.2°C (1.4°F to 2.2°F) (IPCC 2018). Global warming is likely to reach 1.5°C (2.7°F) between 2030 and 2052 if it continues to increase at the current rate (IPCC 2018).

Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already affecting California. The Office of Environmental Health Hazard Assessment identified various indicators of climate change in California, which are scientifically-based measurements that track trends in various aspects of climate change. Many indicators reveal discernable evidence that climate change is occurring in California and is having significant, measurable impacts in the state. Changes in the state's climate have been observed including an increase in annual average air temperature with

record warmth from 2012 to 2016, more frequent extreme heat events, more extreme drought, a decline in winter chill, an increase in cooling degree days and a decrease in heating degree days, and an increase in variability of statewide precipitation (OEHHA 2018).

Warming temperatures and changing precipitation patterns have altered California's physical systems – the ocean, lakes, rivers and snowpack – upon which the state depends. Winter snowpack and spring snowmelt runoff from the Sierra Nevada and southern Cascade Mountains provide approximately one-third of the state's annual water supply. Impacts of climate on physical systems have been observed such as high variability of snow-water content (i.e., amount of water stored in snowpack), decrease in snowmelt runoff, glacier change (loss in area), rise in sea levels, increase in average lake water temperature and coastal ocean temperature, and a decrease in dissolved oxygen in coastal waters (OEHHA 2018).

Impacts of climate change on biological systems, including humans, wildlife, and vegetation, have also been observed including climate change impacts on terrestrial, marine, and freshwater ecosystems. As with global observations, species responses include those consistent with warming: elevational or latitudinal shifts in range, changes in the timing of key plant and animal life cycle events, and changes in the abundance of species and in community composition. Humans are better able to adapt to a changing climate than plants and animals in natural ecosystems. Nevertheless, climate change poses a threat to public health as warming temperatures and changes in precipitation can affect vector-borne pathogen transmission and disease patterns in California as well as the variability of heat-related deaths and illnesses. In addition, since 1950, the area burned by wildfires each year has been increasing.

The California Natural Resources Agency (CNRA) has released four California Climate Change Assessments (2006, 2009, 2012, and 2018), which have addressed the following: acceleration of warming across the state, more intense and frequent heat waves, greater riverine flows, accelerating sea level rise, more intense and frequent drought, more severe and frequent wildfires, more severe storms and extreme weather events, shrinking snowpack and less overall precipitation, and ocean acidification, hypoxia, and warming. To address local and regional governments need for information to support action in their communities, the Fourth Assessment (2018) includes reports for nine regions of the state, including the Los Angeles Region, where the project is located. Key projected climate changes for the Los Angeles Region include the following (CNRA 2018):

- Continued future warming over the Los Angeles region. Across the region, average maximum temperatures are projected to increase around 4°F to 5°F by the mid-century, and 5°F to 8°F by the late-century.
- Extreme temperatures are also expected to increase. The hottest day of the year may be up to 10°F warmer for many locations across the Los Angeles region by the late-century under certain model scenarios. The number of extremely hot days is also expected to increase across the region.

- Despite small changes in average precipitation, dry and wet extremes are both expected to increase. By the late 21st century, the wettest day of the year is expected to increase across most of the Los Angeles region, with some locations experiencing 25% to 30% increases under certain model scenarios. Increased frequency and severity of atmospheric river events are also projected to occur for this region.
- Sea levels are projected to continue to rise in the future, but there is a large range based on emissions scenario and uncertainty in feedbacks in the climate system. Roughly 1 feet to 2 feet of sea level rise is projected by the mid-century, and the most extreme projections lead to 8 feet to 10 feet of sea level rise by the end of the century.
- Projections indicate that wildfire may increase over southern California, but there remains uncertainty in quantifying future changes of burned area over the Los Angeles region.

3.4.2 Regulatory Setting

3.4.2.1 Federal

Massachusetts v. EPA. In *Massachusetts v. EPA* (April 2007), the U.S. Supreme Court directed the EPA administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In December 2009, the administrator signed a final rule with the following two distinct findings regarding GHGs under Section 202(a) of the federal Clean Air Act:

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

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

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

- 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 directs National Highway Traffic Safety Administration (NHTSA) to

establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.

- Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy-efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

Federal Vehicle Standards. In response to the U.S. Supreme Court ruling previously discussed, the Bush Administration issued Executive Order (EO) 13432 in 2007 directing the EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011, and in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016 (75 FR 25324–25728).

In 2010, President Barack Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO_2 in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021 (77 FR 62624–63200). On January 12, 2017, the EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks (EPA 2017b).

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018 (76 FR 57106–57513). The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6%–23% over the 2010 baselines.

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

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

On September 27, 2019, the EPA and NHTSA published the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program (84 Fed. Reg. 51,310), which became effective November 26, 2019. The Part One Rule revokes California's authority to set its own GHG emissions standards and set zero-emission vehicle mandates in California. On March 31, 2020, the EPA and NHTSA issued the Part Two Rule, which will go into effect 60 days after being published in the Federal Register. The Part Two Rule sets CO_2 emissions standards and corporate average fuel economy standards for passenger vehicles and light-duty trucks for model years 2021 through 2026. This issue is evolving as California and 22 other states, as well as the District of Columbia and four cities, filed suit against the EPA and a petition for reconsideration of the rule on November 26, 2019. The litigation is not expected to be resolved for at least several months.

Clean Power Plan and New Source Performance Standards for Electric Generating Units. On October 23, 2015, EPA published a final rule (effective December 22, 2015) establishing the Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (80 FR 64510–64660), also known as the Clean Power Plan. These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units. The guidelines establish CO_2 emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: (1) fossil-fuel-fired electric utility steam-generating units, and (2) stationary combustion turbines. Concurrently, the EPA published a final rule (effective October 23, 2015) establishing Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units (80 FR 64661–65120). The rule prescribes CO_2 emission standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units. The U.S. Supreme Court stayed implementation of the Clean Power Plan pending resolution of several lawsuits.

3.4.2.2 State

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

State Climate Change Targets

The state has taken a number of actions to address climate change. These include EOs, legislation, and CARB plans and requirements. These are summarized below.

EO S-3-05. EO S-3-05 (June 2005) established California's GHG emissions reduction targets and laid out responsibilities among the state agencies for implementing the EO and for reporting on progress toward the targets. This EO established the following targets:

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

EO S-3-05 also directed the California Environmental Protection Agency to report biannually on progress made toward meeting the GHG targets and the impacts to California due to global warming, including impacts to water supply, public health, agriculture, the coastline, and forestry. CAT was formed, which subsequently issued reports from 2006 to 2010 (CAT 2016).

AB 32. In furtherance of the goals established in EO S-3-05, the Legislature enacted AB 32 (Núñez and Pavley). The bill is referred to as the California Global Warming Solutions Act of 2006 (September 27, 2006). AB 32 provided initial direction on creating a comprehensive multiyear program to limit California's GHG emissions at 1990 levels by 2020 and initiate the transformations required to achieve the state's long-range climate objectives.

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

CARB's Climate Change Scoping Plan. One specific requirement of AB 32 is for CARB to prepare a "scoping plan" for achieving the maximum technologically feasible and cost-effective GHG emission reductions by 2020 (Health and Safety Code, Section 38561(a)), and to update the plan at least once every 5 years. In 2008, CARB approved the first scoping plan. The *Climate Change Scoping Plan: A Framework for Change* (*Scoping Plan*) included a mix of recommended

strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the state's long-range climate objectives. The key elements of the Scoping Plan include the following (CARB 2008):

1. Expanding and strengthening existing energy efficiency programs as well as building and appliance standards
2. Achieving a statewide renewable energy mix of 33%
3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85% of California's GHG emissions
4. Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets
5. Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard (LCFS 17 CCR, Section 95480 et seq.)
6. Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation

The Scoping Plan also identified local governments as essential partners in achieving California's goals to reduce GHG emissions because they have broad influence and, in some cases, exclusive authority over activities that contribute to significant direct and indirect GHG emissions through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations. Specifically, the Scoping Plan encouraged local governments to adopt a reduction goal for municipal operations and for community emissions to reduce GHGs by approximately 15% from then levels (2008) by 2020. Many local governments developed community-scale local GHG reduction plans based on this Scoping Plan recommendation.

In 2014, CARB approved the first update to the Scoping Plan. The *First Update to the Climate Change Scoping Plan: Building on the Framework* (*First Update)* defined the state's GHG emission reduction priorities for the next 5 years and laid the groundwork to start the transition to the post-2020 goals set forth in EOs S-3-05 and B-16-2012. The *First Update* concluded that California is on track to meet the 2020 target but recommended a 2030 mid-term GHG reduction target be established to ensure a continuum of action to reduce emissions. The *First Update* recommended a mix of technologies in key economic sectors to reduce emissions through 2050 including: energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings and industrial machinery; decarbonizing electricity and fuel supplies; and, the rapid market penetration of efficient

and clean energy technologies. As part of the *First Update*, CARB recalculated the state's 1990 emissions level, using more recent global warming potentials identified by the Intergovernmental Panel on Climate Change, from 427 MMT CO_2e to 431 MMT CO_2e.

In 2015, as directed by EO B-30-15, CARB began working on an update to the Scoping Plan to incorporate the 2030 target of 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80% below 1990 levels by 2050 as set forth in S-3-05. The Governor called on California to pursue a new and ambitious set of strategies, in line with the five climate change pillars from his inaugural address, to reduce GHG emissions and prepare for the unavoidable impacts of climate change. In the summer of 2016, the Legislature affirmed the importance of addressing climate change through passage of Senate Bill (SB) 32 (Pavley, Chapter 249, Statutes of 2016).

In December 2017, CARB adopted California's 2017 Climate Change Scoping Plan (2017 Scoping Plan) for public review and comment (CARB 2017). The 2017 Scoping Plan builds on the successful framework established in the initial Scoping Plan and First Update, while identifying new, technologically feasible and cost-effective strategies that will serve as the framework to achieve the 2030 GHG target as established by SB 32 and define the state's climate change priorities to 2030 and beyond. The strategies' known commitments include implementing renewable energy and energy efficiency (including the mandates of SB 350), increasing stringency of the LCFS, implementing measures identified in the Mobile Source and Freight Strategies, implementing measures identified in the proposed Short-Lived Climate Pollutant Plan, and increasing stringency of SB 375 targets. To fill the gap in additional reductions needed to achieve the 2030 target, it recommends continuing the Cap-and-Trade Program and a measure to reduce GHGs from refineries by 20%.

For local governments, the 2030 Scoping Plan replaced the initial Scoping Plan's 15% reduction goal with a recommendation to aim for a community-wide goal of no more than 6 MT CO_2e per capita by 2030 and no more than 2 MT CO_2e per capita by 2050, which are consistent with the state's long-term goals. These goals are also consistent with the Under 2 MOU (Under 2 2016) and the Paris Agreement, which are developed around the scientifically based levels necessary to limit global warming below 2°C. The 2030 Scoping Plan recognized the benefits of local government GHG planning (e.g., through climate action plans (CAPs)) and provide more information regarding tools CARB is working on to support those efforts. It also recognizes the CEQA streamlining provisions for project-level review where there is a legally adequate CAP.[3] The Second Update was approved by CARB's Governing Board on December 14, 2017.

[3] *Sierra Club v. County of Napa* (2004) 121 Cal.App.4th 1490; *San Francisco Tomorrow et al. v. City and County of San Francisco* (2015) 229 Cal.App.4th 498; *San Franciscans Upholding the Downtown Specific Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656; *Sequoyah Hills Homeowners Assn. V. City of Oakland* (1993) 23 Cal.App.4th 704, 719.

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32, SB 32, and the EOs and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. A project is considered consistent with the statutes and EOs if it meets the general policies in reducing GHG emissions to facilitate the achievement of the state's goals and does not impede attainment of those goals. As discussed in several cases, a given project need not be in perfect conformity with each and every planning policy or goals to be consistent. A project would be consistent, if it will further the objectives and not obstruct their attainment.

SB 32 and AB 197. SB 32 and AB 197 (enacted in 2016) are companion bills. SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40% below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three members of the Assembly, in order to provide ongoing oversight over implementation of the state's climate policies. AB 197 also added two members of the Legislature to the Board as nonvoting members; requires CARB to make available and update (at least annually via its website) emissions data for GHGs, criteria air pollutants, and TACs from reporting facilities; and, requires CARB to identify specific information for GHG emissions reduction measures when updating the scoping plan.

CARB's Regulations for the Mandatory Reporting of Greenhouse Gas Emissions. CARB's Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (17 CCR 95100–95157) incorporated by reference certain requirements that EPA promulgated in its Final Rule on Mandatory Reporting of Greenhouse Gases (Title 40, CFR, Part 98). Specifically, Section 95100(c) of the Mandatory Reporting Regulation incorporated those requirements that EPA promulgated in the Federal Register on October 30, 2009; July 12, 2010; September 22, 2010; October 28, 2010; November 30, 2010; December 17, 2010; and April 25, 2011. In general, entities subject to the Mandatory Reporting Regulation that emit over 10,000 MT CO_2e per year are required to report annual GHGs through the California Electronic GHG Reporting Tool. Certain sectors, such as refineries and cement plants, are required to report regardless of emission levels. Entities that emit more than the 25,000 MT CO_2e per year threshold are required to have their GHG emission report verified by a CARB-accredited third-party verified.

EO B-18-12. EO B-18-12 (April 2012) directed state agencies, departments, and other entities under the governor's executive authority to take action to reduce entity-wide GHG emissions by at least 10% by 2015 and 20% by 2020, as measured against a 2010 baseline. EO B-18-12 also established goals for existing state buildings for reducing grid-based energy purchases and water use.

EO B-30-15. EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under S-3-05 and AB 32. EO B-30-15 set an interim target goal of reducing GHG emissions to 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80% below 1990 levels by 2050 as set forth in S-3-05. To facilitate achieving this goal, EO B-30-15 called for CARB to update the Scoping Plan to express the 2030 target in terms of MMT CO_2e. The EO also called for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets.

SB 605 and SB 1383. SB 605 (2014) requires CARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants (SLCPs) in the state; and SB 1383 (2016) requires CARB to approve and implement that strategy by January 1, 2018. SB 1383 also establishes specific targets for the reduction of SLCPs (40% below 2013 levels by 2030 for methane and HFCs, and 50% below 2013 levels by 2030 for anthropogenic black carbon), and provides direction for reductions from dairy and livestock operations and landfills. Accordingly, and as mentioned above, CARB adopted its *Short-Lived Climate Pollutant Reduction Strategy* (*SLCP Reduction Strategy*) in March 2017. The *SLCP Reduction Strategy* establishes a framework for the statewide reduction of emissions of black carbon, methane, and fluorinated gases.

EO B-55-18. EO B-55-18 (September 2018) establishes a statewide policy for the state to achieve carbon neutrality no later than 2045, and achieve and maintain net negative emissions thereafter. The goal is an addition to the existing statewide targets of reducing the state's GHG emissions. This EO directs CARB to work with relevant state agencies to ensure that future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal.

Building Energy

Title 24, Part 6. Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically established Building Energy Efficiency Standards that are designed to ensure new and existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. These energy efficiency standards are reviewed every few years by the Building Standards Commission and the California Energy Commission (CEC) (and revised if necessary) (California Public Resources Code, Section 25402(b)(1)). The regulations receive input from members of industry, as well as the public, with the goal of "reducing of wasteful, uneconomic, inefficient, or unnecessary consumption of energy" (California Public Resources Code, Section 25402). These regulations are carefully scrutinized and analyzed for technological and economic feasibility (California Public Resources Code, Section 25402(d)) and cost effectiveness (California Public Resources Code, Sections 25402(b)(2) and (b)(3)). As a result, these standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment.

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

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

For nonresidential projects, some of the key mandatory CALGreen 2019 standards include the following (24 CCR Part 11):

- Short-term bicycle parking. If the new project or an additional alteration is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5% of new visitor motorized vehicle parking spaces being added, with a minimum of one two-bike capacity rack (5.106.4.1.1).
- Long-term bicycle parking. For new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5% of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility (5.106.4.1.2).
- Designated parking for clean air vehicles. In new projects or additions to alterations that add 10 or more vehicular parking spaces, provide designated parking for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.5.2 of the CALGreen Code (5.106.5.2).
- Electric vehicle (EV) charging stations. Construction shall comply with Section 5.106.5.3.1 (single charging space requirements) or Section 106.5.3.2 (multiple charging space requirements) to facilitate future installation of electric vehicle supply equipment (EVSE). The compliance requires empty raceways for future conduit and documentation

that the electrical system has adequate capacity for the future load. Table 5.106.5.3.3 of the CALGreen Code shall be used to determine if single or multiple charging space requirements apply for the future installation of EVSE (5.106.5.3).[4]

- Shade trees. Shade trees shall be planted to comply with Sections 5.106.12.1 (surface parking areas), 5.106.12.2 (landscape areas), and 5.106.12.3 (hardscape areas). Percentages shown shall be measured at noon on the summer solstice. Landscape irrigation necessary to establish and maintain tree health shall comply with Section 5.304.6. (5.106.12).
- Water conserving plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following:
    - Water Closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush (5.303.3.1)
    - Urinals. The effective flush volume of wall-mounted urinals shall not exceed 0.125 gallons per flush (5.303.3.2.1). The effective flush volume of floor-mounted or other urinals shall not exceed 0.5 gallons per flush (5.303.3.2.2).
    - Showerheads. Single showerheads shall have a minimum flow rate of not more than 1.8 gallons per minute and 80 psi (5.303.3.3.1). When a shower is served by more than one showerhead, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi (5.303.3.3.2).
    - Faucets and fountains. Nonresidential lavatory faucets shall have a maximum flow rate of not more than 0.5 gallons per minute at 60 psi (5.303.3.4.1). Kitchen faucets shall have a maximum flow rate of not more than 1.8 gallons per minute of 60 psi (5.303.3.4.2). Wash fountains shall have a maximum flow rate of not more than 1.8 gallons per minute/20 [rim space (inches) at 60 psi] (5.303.3.4.3). Metering faucets shall not deliver more than 0.20 gallons per cycle (5.303.3.4.4). Metering faucets for wash fountains shall have a maximum flow rate not more than 0.20 gallons per cycle/20 [rim space (inches) at 60 psi] (5.303.3.4.5).
- Outdoor potable water use in landscaped areas. Nonresidential developments shall comply with a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent (5.304.1).

[4] Table 5.106.5.3.3 establishes a range of EV charging space requirements based on the total number of parking places of a project. At the minimum, 0 EV charging spaces are required if the project has a total 0 to 9 parking spaces. At the maximum, 6% of the total parking spaces are required to be EV charging spaces for projects with a total number of actual parking spaces of 201 and over.

- Recycled water supply systems. Recycled water supply systems shall be installed in accordance with Sections 5.305.1.1 (outdoor recycled water supply systems), 5.305.1.2 (technical requirements for outdoor recycled water supply systems), and the California Plumbing Code (5.305.1).
- Construction waste management. Recycle and/or salvage for reuse a minimum of 65% of the nonhazardous construction and demolition waste in accordance with Section 5.408.1.1 (construction waste management plan). 5.405.1.2 (waste management company), or 5.408.1.3 (waste stream reduction alternative); or meet a local construction and demolition waste management ordinance, whichever is more stringent (5.408.1).
- Excavated soil and land clearing debris. 100% of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled. For a phased project, such material may be stockpiled on site until the storage site is developed (5.408.3).
- Commissioning. For new buildings 10,000 square feet and over, building commissioning shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner's or owner representative's project requirements. Commissioning shall be performed in accordance with this section by trained personnel with experience on projects of comparable size and complexity (5.410.2).

The California Public Utilities Commission (CPUC), CEC, and CARB also have a shared, established goal of achieving zero net energy (ZNE) for new construction in California. The key policy timelines include: (1) all new residential construction in California will be ZNE by 2020, and (2) all new commercial construction in California will be ZNE by 2030 (CPUC 2013).[5] As most recently defined by the CEC in its 2015 *Integrated Energy Policy Report*, a ZNE code building is "one where the value of the energy produced by on-site renewable energy resources is equal to the value of the energy consumed annually by the building" using the CEC's Time Dependent Valuation metric (CEC 2015).

Title 20. Title 20 of the California Code of Regulations requires manufacturers of appliances to meet state and federal standards for energy and water efficiency. The CEC certifies an appliance based on a manufacturer's demonstration that the appliance meets the standards. New appliances regulated under Title 20 include refrigerators, refrigerator-freezers, and freezers; room air conditioners and room air-conditioning heat pumps; central air conditioners; spot air conditioners; vented gas space heaters; gas pool heaters; plumbing fittings and plumbing fixtures; fluorescent lamp ballasts; lamps; emergency lighting; traffic signal modules; dishwaters; clothes washers and dryers; cooking products; electric motors; low-voltage dry-type distribution transformers; power

[5] It is expected that achievement of the ZNE goal will occur via revisions to the Title 24 standards.

supplies; televisions and consumer audio and video equipment; and battery charger systems. Title 20 presents protocols for testing each type of appliance covered under the regulations and appliances must meet the standards for energy performance, energy design, water performance and water design. Title 20 contains three types of standards for appliances: federal and state standards for federally regulated appliances, state standards for federally regulated appliances, and state standards for non-federally regulated appliances.

SB 1. SB 1 (August 2006, "Go Solar California" or "Million Solar Roofs") established a $3 billion rebate program to support the goal of the state to install rooftop solar energy systems with a generation capacity of 3,000 megawatts through 2016. The goals included establishing solar energy systems as a viable mainstream option for both homes and businesses within 10 years of adoption, and placing solar energy systems on 50% of new homes within 13 years of adoption.

AB 1470. This bill established the Solar Water Heating and Efficiency Act of 2007. The bill includes findings and declarations of the legislature relating to the promotion of solar water heating systems and other technologies that reduce natural gas demand.

AB 1109. Enacted in 2007, AB 1109 required the CEC to adopt minimum energy efficiency standards for general-purpose lighting to reduce electricity consumption by 50% for indoor residential lighting and by 25% for indoor commercial lighting.

Renewable Energy and Energy Procurement

SB 1078. SB 1078 (Sher) (September 2002) established the Renewable Portfolio Standard (RPS) program, which required an annual increase in renewable generation by the utilities equivalent to at least 1% of sales, with an aggregate goal of 20% by 2017. This goal was subsequently accelerated, requiring utilities to obtain 20% of their power from renewable sources by 2010 (see EO S-14-08 and S-21-09).

SB 1368. SB 1368 (September 2006), required the CEC to develop and adopt regulations for GHG emission performance standards for the long-term procurement of electricity by local publicly owned utilities. These standards must be consistent with the standards adopted by the California Public Utilities Commission (CPUC).

AB 1109. Enacted in 2007, AB 1109 required the CEC to adopt minimum energy efficiency standards for general-purpose lighting, to reduce electricity consumption 50% for indoor residential lighting and 25% for indoor commercial lighting.

EO S-14-08. EO S-14-08 (November 2008) focused on the contribution of renewable energy sources to meet the electrical needs of California while reducing the GHG emissions from the electrical sector. This EO required that all retail suppliers of electricity in California serve 33% of

their load with renewable energy by 2020. Furthermore, the EO directed state agencies to take appropriate actions to facilitate reaching this target. The CNRA, through collaboration with the CEC and California Department of Fish and Wildlife (formerly the California Department of Fish and Game), was directed to lead this effort.

EO S-21-09 and SB X1-2. EO S-21-09 (September 2009) directed CARB to adopt a regulation consistent with the goal of EO S-14-08 by July 31, 2010. CARB was further directed to work with the CPUC and CEC to ensure that the regulation builds upon the RPS program and was applicable to investor-owned utilities, publicly owned utilities, direct access providers, and community choice providers. Under this order, CARB was to give the highest priority to those renewable resources that provide the greatest environmental benefits with the least environmental costs and impacts on public health and can be developed the most quickly in support of reliable, efficient, cost-effective electricity system operations. On September 23, 2010, CARB initially approved regulations to implement a Renewable Electricity Standard. However, this regulation was not finalized because of subsequent legislation (SB X1-2, Simitian, statutes of 2011) signed by Governor Brown in April 2011.

SB X1 2 expanded the Renewables Portfolio Standard by establishing a renewable energy target of 20% of the total electricity sold to retail customers in California per year by December 31, 2013, and 33% by December 31, 2020, and in subsequent years. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation (30 megawatts or less), digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location.

SB X1-2 applies to all electricity retailers in the state including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. All of these entities must meet the renewable energy goals previously listed.

SB 350. SB 350 (October 2015) further expanded the RPS by establishing a goal of 50% of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 included the goal to double the energy efficiency savings in electricity and natural gas final end uses (e.g., heating, cooling, lighting, or class of energy uses on which an energy-efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal. Regarding mobile sources, as one of its elements, SB 350 establishes a statewide policy for widespread electrification of the transportation sector, recognizing that such electrification is required for achievement of the state's 2030 and 2050 reduction targets (see California Public Utilities Code, Section 740.12).

SB 100. SB 100 (2018) increased the standards set forth in SB 350 establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030, be secured from qualifying renewable energy sources. SB 100 states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California. This bill requires that the achievement of 100% zero-carbon electricity resources do not increase the carbon emissions elsewhere in the western grid and that the achievement not be achieved through resource shuffling.

Mobile Sources

State Vehicle Standards (AB 1493 and EO B-16-12). AB 1493 (July 2002) was enacted in a response to the transportation sector accounting for more than half of California's CO_2 emissions. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. EO B-16-12 (March 2012) required that state entities under the governor's direction and control support and facilitate the rapid commercialization of zero-emissions vehicles. It ordered CARB, CEC, CPUC, and other relevant agencies to work with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to help achieve benchmark goals by 2015, 2020, and 2025. On a statewide basis, EO B-16-12 established a target reduction of GHG emissions from the transportation sector equaling 80% less than 1990 levels by 2050. This directive did not apply to vehicles that have special performance requirements necessary for the protection of the public safety and welfare. As explained under the "Federal Vehicle Standards" description above, EPA and NHTSA approved the SAFE Vehicles Rule Part One and Two, which revoked California's authority to set its own GHG emissions standards and set zero-emission vehicle mandates in California. As the EPA rule is the subject of pending legal challenges and no GHG adjustment factors have been issued for EMFAC by CARB, this analysis continues to utilize the best available information at this time, as set forth in EMFAC.

Heavy Duty Diesel. CARB adopted the final Heavy Duty Truck and Bus Regulation, Title 13, Division 3, Chapter 1, Section 2025, on December 31, 2014, to reduce PM and NO_x emissions from heavy-duty diesel vehicles. The rule requires PM filters be applied to newer heavier trucks and buses by January 1, 2012, with older vehicles required to comply by January 1, 2015. The rule will require nearly all diesel trucks and buses to be compliant with the 2010 model year engine requirement by January 1, 2023. CARB also adopted an Airborne Toxic Control Measure to limit idling of diesel-fueled commercial vehicles on December 12, 2013. This rule requires diesel-fueled vehicles with gross vehicle weights greater than 10,000 pounds to idle no more than 5 minutes at any location (13 CCR 2485).

EO S-1-07. EO S-1-07 (January 2007, implementing regulation adopted in April 2009) sets a declining LCFS for GHG emissions measured in CO_2e grams per unit of fuel energy sold in California. The initial target of the LCFS is to reduce the carbon intensity of California passenger vehicle fuels by at least 10% by 2020 (17 CCR 95480 et seq.). The carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered. The Low Carbon Fuel Standard was subsequently amended in 2018 to require a 20% reduction in carbon intensity by 2030. This new requirement aligns with the California's overall 2030 target of reducing climate changing emissions 40% below 1990 levels by 2030, set by SB 32. CARB has adopted implementing regulations for both the 10% and 20% carbon intensity reduction targets.

SB 375. SB 375 (Steinberg) (September 2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 requires CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035 and to update those targets every 8 years. SB 375 requires the state's 18 regional metropolitan planning organizations (MPOs) to prepare a Sustainable Communities Strategy (SCS) as part of their Regional Transportation Plan (RTP) that will achieve the GHG reduction targets set by CARB. If a MPO is unable to devise an SCS to achieve the GHG reduction target, the MPO must prepare an Alternative Planning Strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

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

In September 2010, CARB adopted the first SB 375 targets for the regional metropolitan planning organizations. The targets for Southern California Association of Governments (SCAG) are an 8% reduction in emissions per capita by 2020 and a 13% reduction by 2035. Achieving these goals through adoption of a SCS is the responsibility of the metropolitan planning organizations. SCAG adopted its first RTP/SCS in April 2012. The plan quantified a 9% reduction by 2020 and a 16% reduction by 2035 (SCAG 2012). In June 2012, CARB accepted SCAG's quantification of GHG reductions and its determination the SCS, if implemented, would achieve SCAG targets. On April 4, 2016, the SCAG Regional Council adopted the 2016 RTP/SCS, which builds upon the progress made in the 2012 RTP/SCS. The updated RTP/SCS quantified an 8% reduction by 2020 and an 18% reduction by 2030 (SCAG 2016). In June 2016, CARB accepted SCAG's quantification of GHG reductions and its determination the SCS, if implemented, would achieve SCAG targets.

Advanced Clean Cars Program and Zero-Emissions Vehicle Program. The Advanced Clean Cars program (January 2012) is a new emissions-control program for model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB 2012). To improve air quality, CARB has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that in 2025 cars will emit 75% less smog-forming pollution than the average new car sold today. To reduce GHG emissions, CARB, in conjunction with the EPA and the NHTSA, adopted new GHG standards for model year 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34% in 2025. The ZEV program will act as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles in the 2018 to 2025 model years.

AB 1236. AB 1236 (October 2015) (Chiu) required a city, county, or city and county to approve an application for the installation of EV charging stations, as defined, through the issuance of specified permits unless the city or county makes specified written findings based upon substantial evidence in the record that the proposed installation would have a specific, adverse impact upon the public health or safety, and there is no feasible method to satisfactorily mitigate or avoid the specific, adverse impact. The bill provided for appeal of that decision to the planning commission, as specified. The bill provided that the implementation of consistent statewide standards to achieve the timely and cost-effective installation of EV charging stations is a matter of statewide concern. The bill required electric vehicle charging stations to meet specified standards. The bill required a city, county, or city and county with a population of 200,000 or more residents to adopt an ordinance, by September 30, 2016, that created an expedited and streamlined permitting process for EV charging stations, as specified. The bill also required a city, county, or city and county with a population of less than 200,000 residents to adopt this ordinance by September 30, 2017.

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

Solid Waste

AB 939, AB 341, and AB 1826. In 1989, AB 939, known as the Integrated Waste Management Act (California Public Resources Code, Sections 40000 et seq.), was passed because of the increase in waste stream and the decrease in landfill capacity. The statute established the California Integrated Waste Management Board, which oversees a disposal reporting system. AB 939

mandated a reduction of waste being disposed where jurisdictions were required to meet diversion goals of all solid waste through source reduction, recycling, and composting activities of 25% by 1995 and 50% by the year 2000.

AB 341 (Chapter 476, Statutes of 2011) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75% of solid waste generated be source-reduced, recycled, or composted by the year 2020, and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop strategies to achieve the state's policy goal. CalRecycle conducted several general stakeholder workshops and several focused workshops and in August 2015 published a discussion document titled AB 341 Report to the Legislature, which identifies five priority strategies that CalRecycle believes would assist the state in reaching the 75% goal by 2020, legislative and regulatory recommendations and an evaluation of program effectiveness (CalRecycle 2012).

AB 1826 (Chapter 727, Statutes of 2014, effective 2016) requires businesses to recycle their organic waste (i.e., food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste) depending on the amount of waste they generate per week. This law also requires local jurisdictions across the state to implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings that consist of five or more units. The minimum threshold of organic waste generation by businesses decreases over time, which means an increasingly greater proportion of the commercial sector will be required to comply.

Water

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

EO B-37-16. Issued May 2016, EO B-37-16 directed the State Water Resources Control Board (SWRCB) to adjust emergency water conservation regulations through the end of January 2017 to reflect differing water supply conditions across the state. The SWRCB also developed a proposal to achieve a mandatory reduction of potable urban water usage that builds off the mandatory 25%

reduction called for in EO B-29-15. The SWRCB and Department of Water Resources will develop new, permanent water use targets that build upon the existing state law requirements that the state achieve 20% reduction in urban water usage by 2020. EO B-37-16 also specifies that the SWRCB permanently prohibit water-wasting practices such as hosing off sidewalks, driveways, and other hardscapes; washing automobiles with hoses not equipped with a shut-off nozzle; using non-recirculated water in a fountain or other decorative water feature; watering lawns in a manner that causes runoff, or within 48 hours after measurable precipitation; and irrigating ornamental turf on public street medians.

EO B-40-17. EO B-40-17 (April 2017) lifted the drought emergency in all California counties except Fresno, Kings, Tulare, and Tuolumne. It also rescinded EO B-29-15, but expressly states that EO B-37-16 remains in effect and directs the SWRCB to continue development of permanent prohibitions on wasteful water use.

Other State Actions

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

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

With respect to GHG emissions, the State CEQA Guidelines state that lead agencies "shall make a good faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions (14 CCR 15064.4(a)). The State CEQA Guidelines also note that lead agencies shall quantify emissions by selecting a "model or methodology" of its choosing or rely on "qualitative analysis or performance based standards" (14 CCR 15064.4(a), (c)). The State CEQA Guidelines further state that lead agencies should consider the following when assessing the significance of impacts from GHG emissions on the environment: (1) the extent a project may

increase or reduce GHG emissions as compared to the existing environmental setting; (2) whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and (3) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)).

EO S-13-08. EO S-13-08 (November 2008) is intended to hasten California's response to the impacts of global climate change, particularly sea-level rise. Therefore, the EO directs state agencies to take specified actions to assess and plan for such impacts. The final 2009 California Climate Adaptation Strategy report was issued in December 2009 (CNRA 2009), and an update, Safeguarding California: Reducing Climate Risk, followed in July 2014 (CNRA 2014). To assess the state's vulnerability, the report summarizes key climate change impacts to the state for the following areas: Agriculture, Biodiversity and Habitat, Emergency Management, Energy, Forestry, Ocean and Coastal Ecosystems and Resources, Public Health, Transportation, and Water. Issuance of the Safeguarding California: Implementation Action Plans followed in March 2016 (CNRA 2016). In January 2018, the CNRA released the Safeguarding California Plan: 2018 Update, which communicates current and needed actions that state government should take to build climate change resiliency (CNRA 2018).

3.4.2.3 Regional and Local

South Coast Air Quality Management District

Air districts typically act in an advisory capacity to local governments in establishing the framework for environmental review of air pollution impacts under CEQA. This may include recommendations regarding significance thresholds, analytical tools to estimate emissions and assess impacts, and mitigations for potentially significant impacts. Although air districts will also address some of these issues on a project-specific basis as responsible agencies, they may provide general guidance to local governments on these issues (SCAQMD 2008). As discussed in Section 3.4.3, Thresholds of Significance, the SCAQMD has recommended numeric CEQA significance thresholds for GHG emissions for lead agencies to use in assessing GHG impacts of residential and commercial development projects; however, these thresholds were not adopted. See the SCAQMD Draft Guidance Document – Interim CEQA Greenhouse Gas Significance Threshold, dated October 2008, for a discussion of the proposed thresholds (SCAQMD 2008). See Section 3.2.2.3, Local (South Coast Air Quality Management District), for additional discussion on the SCAQMD.

Southern California Association of Governments

SB 375 requires MPOs to prepare a SCS in their RTP. The SCAG Regional Council adopted the 2012 RTP/SCS in April 2012 (SCAG 2012), and the 2016–2040 RTP/SCS (2016 RTP/SCS) was adopted in April 2016. Both the 2012 and 2016 RTP/SCSs establish a development pattern for the

region that, when integrated with the transportation network and other policies and measures, would reduce GHG emissions from transportation (excluding goods movement). Specifically, the 2012 RTP/SCS links the goals of sustaining mobility with the goals of fostering economic development; enhancing the environment; reducing energy consumption; promoting transportation-friendly development patterns; and encouraging all residents affected by socioeconomic, geographic, and commercial limitations to be provided with fair access. The 2012 and 2016 RTP/SCSs do not require that local general plans, specific plans, or zoning be consistent with it but provide incentives for consistency for governments and developers. Because the current SCAQMD AQMP (2016 AQMP) is based on the SCAG 2016 RTP/SCS demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by SCAG for their 2016–2040 RTP/SCS, the SCAG 2016 RTP/SCS is discussed in Section 3.4.4, Impacts Analysis. See Section 3.2.2.3, Local (Southern California Association of Governments), for an additional discussion on SCAG.

SCAG has developed Connect SoCal, the 2020-2045 RTP/SCS, which is a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals. Connect SoCal charts a path toward a more mobile, sustainable and prosperous region by making connections between transportation networks, between planning strategies and between the people whose collaboration can improve the quality of life for Southern Californians. Connect SoCal embodies a collective vision for the region's future and is developed with input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura. On May 7, 2020, SCAG's Regional Council adopted Connect SoCal for federal transportation conformity purposes only. In light of the COVID-19 pandemic, the Regional Council will consider approval of Connect SoCal in its entirety and for all other purposes within 120 days from May 7, 2020.

City of Long Beach

General Plan

The City of Long Beach's (City's) General Plan has adopted a broad spectrum of policies related to climate change, as shown in the Air Quality Element. This element was adopted in 1996 and sets forth the goals, objectives, and policies that guide the City on the implementation of its air quality improvement programs and strategies. In addition to the goals, policies, and strategies identified in Section 3.2, Air Quality (3.2.2.3 Local) that would reduce criteria air pollutants, which would also result in co-benefits to reducing GHG emissions, the following goals and policies are applicable to the Proposed Project. On December 3, 2019, the City Council adopted a resolution adopting the updated Land Use Element to the Long Beach General Plan, replacing the existing Land Use Element comprised of policies and the adopted General Plan Land Use Designation maps, with

the updated Land Use Element, including revised policies and the PlaceType and Height maps. Goals and policies of the 2019 Land Use Element are addressed in Section 3.2, Air Quality, of this Draft PEIR/PEIS.

- **Goal 7:** Reduce emissions through reduced energy consumption.
- **Policy 7.1:** Energy Conservation. Reduce energy conservation through conservation improvements and requirements.
- **Action 7.1.4:** Encourage the incorporation of energy conservation features in the design of all new construction
- **Action 7.1.7:** Support efforts to reduce GHG emissions that diminish the stratospheric ozone layer

Sustainable City Action Plan

The City adopted its Sustainable City Action Plan (SCAP) in February 2010 to guide operational, policy, and financial decisions within the City. The SCAP is a City-adopted plan to guide the City in becoming more sustainable. The SCAP identifies a wide range of goals and implementation actions to conserve energy and water, reduce solid waste, address global warming, tailor urban design, protect natural habitats, improve transportation options, and reduce risks to human health. Specific goals related to GHG include increasing the use of renewable energy in the City and reducing the City's overall electric load by 10%. Other goals include reducing single-occupancy vehicle trips by 10% and advancing higher density mixed-use neighborhoods that are bike and pedestrian friendly. While the Sustainable City Action Plan provides a sustainable framework for future developments within the City, the goals outlined in the City's Action Plan are primarily municipal in nature, and not project-specific.

Climate Action and Adaptation Plan

On May 31, 2019, the City released a working draft of the CAAP. The CAAP will provide a framework for creating or updating policies, programs, practices, and incentives for Long Beach residents and businesses to reduce the City's GHG footprint, and ensure the community and physical assets are better protected from the impacts of climate change. Engaging those who live, work, and play in Long Beach is essential to creating an effective and successful CAAP. Residents, business owners, students, and other community stakeholders are encouraged to get involved by providing input and sharing ideas, priorities, and solutions to help establish and achieve the City's climate goals.

3.4.3 Thresholds of Significance

3.4.3.1 Significance Criteria

The significance criteria used to evaluate the Proposed Project's GHG emissions impacts are based on the recommendations provided in Appendix G of the State CEQA Guidelines (14 CCR 15000 et seq.). For the purposes of this GHG emissions analysis, the Proposed Project would have a significant environmental impact if it would:

A. Generate GHG 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 GHGs.

Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs. There are currently no established thresholds for assessing whether the GHG emissions of a project, such as the Proposed Project, would be considered a cumulatively considerable contribution to global climate change; however, all reasonable efforts should be made to minimize a project's contribution to global climate change. In addition, while GHG impacts are recognized exclusively as cumulative impacts (California Air Pollution Control Officers Association (CAPCOA) 2008), GHG emissions impacts must also be evaluated at a project level under CEQA.

The State CEQA Guidelines do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the State CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA (CNRA 2009a). The State of California has not adopted emission-based thresholds for GHG emissions under CEQA. The Governor's Office of Planning and Research's Technical Advisory titled "CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act Review" states that "public agencies are encouraged but not required to adopt thresholds of significance for environmental impacts. Even in the absence of clearly defined thresholds for GHG emissions, the law requires that such emissions from CEQA projects must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact" (OPR 2008). Furthermore, the advisory document indicates that "in the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a 'significant impact,' individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice." Section 15064.7(c) of the State CEQA Guidelines specifies that "when adopting thresholds of significance,

a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence."

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

The SCAQMD formed a GHG CEQA Significance Threshold Working Group to work with SCAQMD staff on developing GHG CEQA significance thresholds until statewide significance thresholds or guidelines are established. From December 2008 to September 2010, the SCAQMD hosted working group meetings and revised the draft threshold proposal several times, although it did not officially provide these proposals in a subsequent document. The SCAQMD has continued to consider adoption of significance thresholds for residential and general land use development projects. The most recent proposal, issued in September 2010, uses the following tiered approach to evaluate potential GHG impacts from various uses (SCAQMD 2010):

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

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

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

Tier 4 Consider whether the project generates GHG emissions in excess of applicable performance standards for the project service population (population plus employment). The efficiency targets were established based on the goal of AB 32 to reduce statewide GHG emissions to 1990 levels by 2020. The 2020 efficiency targets are 4.8 MT CO_2e per service population per year (MT CO_2e/SP/year) for project level analyses and 6.6 MT CO_2e/SP/year for plan level analyses. The 2035 efficiency targets are 3.0 MT CO_2e/SP/year for project level analyses and 4.1 MT CO_2e/SP/year for plan level analyses. If the project generates emissions in excess of the applicable efficiency targets, move to Tier 5.

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

Because the Proposed Project involves a mix of different land uses, this analysis applies the SCAQMD Option 1 screening threshold of 3,000 MT CO_2e per year for mixed-use projects for Tier 3. While the Proposed Project would include industrial land uses, because no stationary sources of emissions that would require a permit from the SCAQMD are specifically identified or analyzed herein,[6] this analysis applies the threshold of 3,000 MT CO_2e per year rather than the 10,000 MT CO_2e per year threshold for industrial uses. Per the SCAQMD guidance, construction emissions should be amortized over the operational life of the project, which is assumed to be 30 years (SCAQMD 2008). This impact analysis, therefore, adds amortized construction emissions to the estimated annual operational emissions and then compares operational emissions to the proposed SCAQMD threshold of 3,000 MT CO_2e per year for the Tier 3 analysis.

For the Tier 4 analysis, because the Proposed Project would be built out in 2040, a more stringent efficiency threshold than proposed by the SCAQMD for Tier 4 is used. The Tier 4 analysis applies the efficiency threshold developed for the Recirculated Draft Environmental Impact Report (RDEIR) prepared for the General Plan Land Use and Urban Design Elements Project (City of Long Beach 2019b), which also anticipated a buildout year of 2040. As part of the City's CAAP, although not yet adopted, a GHG Emission Reduction Target Options Memo was prepared in August 2018 and was updated in May 2019 based on more recent data and direction from the Long Beach Mayor and City Council (LSA 2019). The GHG Emissions Reduction Target Options Memo provides the supporting documentation needed as substantial evidence to support the use of the identified targets for significance analysis of a GHG threshold. The Memo identifies three target options that could be used for the CAAP. Although another target option may be formally adopted, target Option D "Local Emissions Source-Based Intensity Targets", has been identified

6 Emergency, or standby, diesel generators over 50 horsepower are stationary sources that would require a SCAQMD permit; however, due to the Proposed Project being a Specific Plan that does not require specific development to occur, it is not assumed that stationary sources would be proposed and the 10,000 MT CO_2 per year threshold would be applicable.

by the City and its CAAP Scientific Working Group as the preferable target because it represents per capita and per service population[7] emissions efficiency targets for Long Beach based on the sub-set of statewide emissions sectors that are included in City's CAAP GHG emissions inventory. This target aligns with the most current guidance from the CARB and OPR in how it is tailored to match the emissions sectors included locally in the City's inventory. Target Option D consists of a 2040 per capita efficiency target of 2.79 MT CO_2e per year per capita (or MT CO_2e/capita/year); or expressed another way, 1.92 MT CO_2e per service population per year (or MT CO_2e/SP/year (City of Long Beach 2019b). Consistent with the draft CAAP, this efficiency target will be used for purposes of determining project significance. This metric is appropriate in that it would achieve per capita emissions that align with the State's reduction goals, and would be consistent with the requirements of the Global Covenant of Mayors. Because the Proposed Project is a Specific Plan and would have a buildout year of 2040, it was determined to be appropriate to apply the same threshold used in the RDEIR.

To estimate the Proposed Project-generated GHG emissions per service population per year, the total GHG emissions associated with the Proposed Project in 2040 is divided by the total service population (i.e., employees) associated with the anticipated Proposed Project buildout, as determined in the VMT analysis for the project (LSA 2020) to determine whether the Proposed Project would result in a significant GHG impact. As explained in Chapter 2.0, Project Description, and Section 3.2, Air Quality, in 2040, the estimated job absorption for the Proposed Project is 4,884; the remaining 6,286 jobs are anticipated to occur after 2040. However, the emission inventory for the Proposed Project assumes buildout of the entire GCSP by 2040. Therefore, it is appropriate to assume the full employment projection of 11,170 employees to estimate an efficiency metric when using full buildout emissions as the basis.

Regarding the potential for the Proposed Project to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, the efficiency target of 1.92 MT CO_2e/SP/year is also relevant because the per service population efficiency targets are based on the 2040 reduction targets established for the CAAP and are consistent with the State's target reductions of 40% below 1990 levels by 2030 and the State's 2050 GHG target (AECOM 2019).

Regarding the National Environmental Policy Act (NEPA), the Council on Environmental Quality has withdrawn its final guidance for federal agencies on how to consider GHG emissions and the effects of climate change in NEPA reviews, a Notice of Availability for which was published on August 5, 2016 (81 FR 51866) (CEQ 2019). As explained in the Notice of Availability, the withdrawn guidance was not a regulation. Pursuant to Executive Order 13783, Promoting Energy Independence and Economic Growth, of March 28, 2017, the guidance has been withdrawn for

[7] "Per capita" refers to total citywide emissions divided by the total number of residents in the City. "Per service population" refers to total citywide emissions divided by the number of employees and the number of residents in the planning area.

further consideration (White House 2017). Subsequently, in 2019, the Council on Environmental Quality published draft guidance for the consideration of GHG emissions under NEPA (84 FR 30097–30099). If the 2019 draft guidance is finalized, the result would replace the final guidance that was issued in 2016 and withdrawn in 2017 for further consideration pursuant to Executive Order 13783. There is currently no formal guidance or numeric thresholds for evaluating project-generated GHG emissions in NEPA assessments; however, project-generated GHG emissions are included and evaluated herein per CEQA.

3.4.3.2 Approach and Methodology

Construction Emissions

CalEEMod Version 2016.3.2 was used to estimate potential Proposed Project-generated GHG emissions during construction. Construction of the Proposed Project would result in GHG emissions primarily associated with the use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. All details for construction criteria air pollutants discussed in Section 3.2.3.2, Approach and Methodology (Construction Emissions), are also applicable for the estimation of construction-related GHG emissions. As such, see Section 3.2.3.2 for a discussion of construction emissions calculation methodology and assumptions used in the GHG emissions analysis.

Operational Emissions

Emissions from the operational phase of the Proposed Project were estimated using CalEEMod Version 2016.3.2. Operational year 2040 was assumed consistent with the traffic impact analysis (TIA) prepared for the Proposed Project (Appendix D). Per the TIA, the Proposed Project development scenario would include a mix of commercial, retail, and industrial land uses totaling 7,011,195 square feet.

Emissions from the existing land uses (Existing Scenario) were also estimated using CalEEMod to present the net change in criteria air pollutant emissions. Operational year 2018 was assumed for the Existing Scenario. A large portion of the existing uses (1,409,441 square feet, approximately 40% of 3,503,616 square feet of existing land use) is currently vacant, which was formerly occupied by Boeing. The total existing land use within the Plan Area that is currently occupied and therefore, evaluated in the Existing Scenario is approximately 2,094,175 square feet.

Potential Proposed Project-generated and Existing Scenario operational GHG emissions were estimated for area sources (landscape maintenance), energy sources (natural gas and electricity), mobile sources, solid waste, water supply and wastewater treatment, and other sources of emissions (off-road equipment, emergency generator testing, and TRU idling). Emissions

from each category are discussed in the following text with respect to the Proposed Project. For additional details, see Section 3.2.3.2, Approach and Methodology (Operational Emissions), for a discussion of operational emission calculation methodology and assumptions, specifically for area, energy (natural gas), and mobile sources.

Area

CalEEMod was used to estimate GHG emissions from the Proposed Project's area sources, which include operation of gasoline-powered landscape maintenance equipment, which produce minimal GHG emissions. See Section 3.2.3.2 for a discussion of landscaping equipment emissions calculations. Consumer product use and architectural coatings result in VOC emissions, which are analyzed in air quality analysis only, and little to no GHG emissions.

Energy

The estimation of operational energy emissions was based on CalEEMod land use defaults and units or total area (i.e., square footage) of the Proposed Project's and Existing Scenario land uses. The energy use (electricity or natural gas usage per square foot per year) from nonresidential land uses is calculated in CalEEMod based on the California Commercial End-Use Survey database. Emissions are calculated by multiplying the energy use by the utility carbon intensity (pounds of GHGs per kilowatt-hour for electricity or 1,000 British thermal units for natural gas) for CO_2 and other GHGs. Annual natural gas and electricity emissions were estimated in CalEEMod using the emissions factors for Southern California Edison (SCE), which would be the energy provider for the Plan Area.

The current version of CalEEMod assumes compliance with the 2016 Title 24 Building Energy Efficiency Standards (CAPCOA 2017); however, the Proposed Project would be required to comply with the 2019 Title 24 Standards at a minimum. Per the CEC Impact Analysis for the 2019 Update to the California Energy Efficiency Standards for Residential and Non-Residential Buildings, the first-year savings for newly constructed non-residential buildings are 197 gigawatt hours of electricity, 76.6 megawatt of demand, and 0.27 million therms of gas, representing reductions from the 2016 Title 24 standard of 10.7%, 9%, and 1%, respectively (CEC 2018a). To take into account energy reductions associated with compliance with 2019 Title 24, the CalEEMod Title 24 electricity and natural gas values were reduced by 10.7% and 1%, respectively, for all Proposed Project buildings. The applied reductions are anticipated to be conservative as in general, nonresidential buildings built to the 2019 standards are anticipated to use an estimated 30% less energy than those built to the 2016 standards (CEC 2018b).

CalEEMod default energy intensity factors (CO_2, CH_4, and N_2O mass emissions per kilowatt-hour) for SCE is based on the value for SCE's energy mix in 2012. As explained in Section 3.4.2.2, State, SB X1 2 established a target of 33% from renewable energy sources for all

electricity providers in California by 2020 and SB 100 calls for further development of renewable energy, with a target of 44% by 2024, 52% by 2027, and 60% by 2030. The CO_2 emissions intensity factor for utility energy use in CalEEMod was adjusted consistent with SCE's 2018 Power Content Label, which reported that 36% of the power mix was generated by eligible renewable sources (SCE 2017). Because SCE is striving to meet the 60% RPS by December 31, 2030, the CO_2 emissions intensity factor is anticipated to be less than assumed in CalEEMod at Proposed Project operation (2040), which would reflect the increase in percentage of renewable energy in SCE's energy portfolio.

Mobile Sources

All details for criteria air pollutants discussed in Section 3.2.3.2 are also applicable for the estimation of operational mobile source GHG emissions. In summary, emissions associated with passenger vehicles and heavy-duty trucks traveling to and from the Plan Area were estimated for the Proposed Project and Existing Scenario using CARB EMFAC2017 vehicle emissions factors (2040 for the Proposed Project and 2018 for the Existing Scenario), the TIA (Appendix D), and the VMT analysis prepared for the Proposed Project (LSA 2020). To estimate annual emissions, daily activity was multiple by 365 days per year. While the 365 days per year operating scenario is appropriate for industrial and retail land uses, it is conservative to apply to commercial land uses that have a reduction in activity on the weekends.

Regulatory measures related to mobile sources include AB 1493 (Pavley) and related federal standards. AB 1493 required that CARB establish GHG emission standards for automobiles, light-duty trucks, and other vehicles determined by CARB to be vehicles that are primarily used for noncommercial personal transportation in the state. In addition, the NHTSA and EPA have established corporate fuel economy standards and GHG emission standards, respectively, for automobiles and light-, medium-, and heavy-duty vehicles. Implementation of these standards and fleet turnover (replacement of older vehicles with newer ones) will gradually reduce emissions from the Proposed Project's motor vehicles. The effectiveness of fuel economy improvements was evaluated by using the EMFAC2017 emission factors to the extent it was captured for motor vehicles in 2040 for the Proposed Project and 2018 for the Existing Scenario.

Solid Waste

The Proposed Project and Existing Scenario would generate solid waste, and therefore, result in CO_2e emissions associated with landfill off-gassing. CalEEMod default values for solid waste generation were used to estimate GHG emissions associated with solid waste for the Proposed Project and Existing Scenario. It was assumed that the Proposed Project and Existing Scenario would have a 50% solid waste diversion rate, consistent with the solid waste diversion requirements of AB 939, Integrated Waste Management Act. It should be noted that this is a

conservative assumption for the Proposed Project, as the goal for the state is 75% diversion by 2020 in accordance with AB 341.

Water and Wastewater Treatment

Supply, conveyance, treatment, and distribution of water for the Proposed Project and Existing Scenario require the use of electricity, which would result in associated indirect GHG emissions. Similarly, wastewater generated by the Proposed Project and Existing Scenario requires the use of electricity for conveyance and treatment, along with GHG emissions generated during wastewater treatment. The indoor and outdoor water use and electricity consumption from water use and wastewater generation were estimated using CalEEMod default values for the Proposed Project and Existing Scenario, and it was assumed that wastewater treatment would be 100% aerobic.

Off-road Equipment, Stationary Sources, and Other Sources of Emissions

Based on the type of land uses that would be developed under the GCSP, there are additional emission sources that are either not captured in CalEEMod or specifics are not available to accurately estimate emissions using CalEEMod. Potential additional sources of GHG emissions include: emergency generators, boilers, broilers (meat cooking), ovens, cogeneration facilities, chillers, cooling towers, autoclave, metals production, painting and spray booths, off-road equipment (e.g., forklifts), truck idling, and transport refrigeration units (TRUs). In addition, emissions from the stationary and mobile sources listed above are also anticipated to occur under the Existing Scenario based on the existing land use. For most of these sources, because specifics are not available to accurately estimate emissions from these anticipated sources under the Proposed Project and Existing Scenario, associated emissions are not included in the estimated emissions presented herein. However, in a good faith effort to include sources typically associated with warehouse/industrial land uses (i.e., warehousing, high cube cold storage warehouse, and manufacturing), forklifts, yard trucks, emergency generators, and TRUs are included in the Proposed Project's emission inventory. For the Existing Scenario, emissions from forklifts and yard trucks associated with the warehouse/industrial land uses (i.e., warehousing, mini warehouse, and manufacturing) are included in the emission inventory. Methods and assumptions to estimate these sources of emissions are discussed in Section 3.2.3.2. Note that all stationary sources developed under the GCSP would be required to comply with applicable SCAQMD rules and regulations, and would be required to obtain a permit to operate from the SCAQMD.

3.4.4 Impacts Analysis

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

Construction Impacts

Construction of the Proposed Project would result in GHG emissions, which are primarily associated with use of off-road construction equipment and on-road vehicles (haul trucks, vendor trucks, and worker vehicles). The SCAQMD *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold* (2008) recommends that, "construction emissions be amortized over a 30-year project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies." Thus, the total construction GHG emissions were calculated, amortized over 30 years, and added to the total operational emissions for comparison with the GHG significance threshold of 3,000 MT CO_2e per year. Therefore, the determination of significance is addressed in the operational emissions discussion following the estimated construction emissions.

CalEEMod was used to calculate the annual GHG emissions based on the construction scenario described in Section 3.2.3.2, Approach and Methodology (Construction Emissions).

Construction of the Proposed Project is assumed to last a total of approximately 20 years. The first full year of construction, which is 2020, was assumed for modeling purposes, which is the estimated worst-case construction year because equipment and vehicle emission factors for later years would be slightly less due to more stringent standards for in-use off-road equipment and heavy-duty trucks, as well as fleet turnover replacing older equipment and vehicles in later years. The 2020 scenario assumes buildout of 5% of the Proposed Project, which assumes steady development of the GCSP over 20 years. To estimate total GHG emissions from construction over 20 years, the estimated annual GHG emissions from 2020 was multiplied by 20. On-site sources of GHG emissions include off-road equipment and off-site sources including haul trucks, vendor trucks, and worker vehicles. Table 3.4-3, Estimated Annual Construction GHG Emissions, presents construction emissions for the Proposed Project from on-site and off-site emission sources.

Table 3.4-3
Estimated Annual Construction GHG Emissions

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
2020 (one full year)	1,419.48	0.21	0.00	1,424.61
Total over 20 years	**28,389.67**	**4.10**	**0.00**	**28,492.22**

Notes: GHG = greenhouse gas; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
See Appendix B-1, Emission Calculations, for complete results.

As shown in Table 3.4-3, the estimated total GHG emissions during construction of would total approximately 28,492 MT CO_2e over the assumed 20-year construction period. Estimated Proposed Project-generated construction emissions amortized over 30 years would be approximately 950 MT CO_2e per year. Because there is no separate GHG threshold for construction, the evaluation of significance is discussed in the operational emissions analysis in the following text.

Operational Impacts

Operation of the Proposed Project and operation under the Existing Scenario would generate GHG emissions through motor vehicle trips (including passenger vehicles and heavy-duty truck trips[8]); landscape maintenance equipment operation (area source); energy use (natural gas and electricity); solid waste disposal; water supply, treatment, and distribution and wastewater treatment; and other sources of emissions (off-road equipment, emergency generator testing, and TRU idling). CalEEMod was used to calculate the annual GHG emissions based on the operational assumptions described in Section 3.4.3.2, Approach and Methodology (Operational Emissions).

The estimated operational Proposed Project-generated and Existing Scenario GHG emissions from area sources, energy usage, motor vehicles, solid waste generation, water usage and wastewater generation, and other emission sources, and the net change in emissions (Proposed Project minus the Existing Scenario) are shown in Table 3.4-4, Estimated Annual Operational GHG Emissions.

Table 3.4-4
Estimated Annual Operational GHG Emissions

Emission Source	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Proposed Project				
Area	0.18	0.01	0.00	0.19
Energy	20,889.92	0.77	0.22	20,974.75
Mobile	67,935.82	2.11	6.28	69,860.23
Solid waste	903.67	53.41	0.00	2,238.80
Water supply and wastewater	6,096.57	2.03	1.19	6,501.13
Off-road equipment	21,179.34	0.86	0.00	21,200.78
Emergency Generator Testing (Stationary)	130.41	0.02	0.00	130.87
Transport refrigeration units	92.69	0.00	0.00	92.69
Total	**117,228.60**	**59.21**	**7.69**	**120,999.44**

[8] "Heavy-duty trucks" include light-heavy-duty trucks (categories 1 and 2 in EMFAC, 2-axle), medium-heavy-duty trucks (3-axle), and heavy-heavy-duty trucks (4+-axle).

Table 3.4-4
Estimated Annual Operational GHG Emissions

Emission Source	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Existing Scenario				
Area	0.05	0.00	0.00	0.06
Energy	6,737.27	0.27	0.08	6,766.47
Mobile	39,948.07	2.29	4.21	41,259.83
Solid waste	348.00	20.57	0.00	862.16
Water supply and wastewater	1,852.31	0.59	0.34	1,969.06
Off-road equipment	6,872.29	2.14	0.00	6,925.78
Total	**55,757.99**	**25.86**	**4.63**	**57,783.36**
Net Change in Emissions				
Net Change (Proposed Project – Existing Scenario)	**61,470.61**	**33.35**	**3.06**	**63,216.08**
			Amortized construction emissions	*949.74*
			Total net operational + amortized construction GHGs	**64,165.82**

Notes: GHG = greenhouse gas; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
See Appendix B-1, Emission Calculations, for complete results.
Totals may not sum due to rounding.
The Proposed Project emissions reflect operational year 2040.
The Existing Scenario emissions reflect operational year 2018.
Limited to sources discussed in Section 3.4.3.2.

As shown in Table 3.4-4, estimated annual Proposed Project-generated GHG emissions would be approximately 120,999 MT CO_2e per year as a result of Proposed Project operations only. As the Existing Scenario is estimated to generate 57,783 MT CO_2e per year, the net change in emissions is estimated to be 63,216 MT CO_2e per year. After accounting for amortized Proposed Project construction emissions, total net GHGs generated by the Proposed Project would be approximately 64,166 MT CO_2e per year. As such, annual operational GHG emissions with amortized construction emissions would exceed the SCAQMD threshold of 3,000 MT CO_2e per year.

Because the Proposed Project would exceed the Tier 3 SCAQMD threshold of 3,000 MT CO_2e per year, a Tier 4 analysis is conducted to evaluate the Proposed Project's efficiency on a service population basis. As explained previously, the Tier 4 efficiency metric threshold used is 1.92 MT CO_2e/SP/year consistent with the RDEIR prepared for the General Plan Land Use and Urban Design Elements Project (City of Long Beach 2019b), which is also a plan-level analysis with a 2040 buildout year. The efficiency metric threshold used is 1.92 MT CO_2e/SP/year is more stringent than the proposed SCAQMD 2035 efficiency metric of 4.1 MT CO_2e/SP/year for plan level analyses. As shown in Table 3.4-3, the Proposed Project would generate approximately 120,999 MT CO_2e per year as a result of Proposed Project operations only; however, the net change between the Proposed

Project and Existing, plus amortized Proposed Project construction emissions, is 64,166 MT CO_2e per year. The Proposed Project's service population, which is defined as residents plus employees, consists solely of employees as the Proposed Project does not include a residential land use component. Per the Proposed Project's job projection analysis, the estimated service population (i.e., employees) for the Proposed Project is 11,170 (Svesson 2020).[9] Accordingly, the Proposed Project is estimated to result in 5.74 MT CO_2e/SP/year (64,166 MT CO_2e/year ÷ 11,170 SP), which would exceed the applied efficiency metric threshold 1.92 MT CO_2e/SP/year.

CEQA Impact Determination

Therefore, the Proposed Project's GHG contribution would be cumulatively considerable and is potentially significant. Implementation of mitigation measures **MM-AQ-1** (Construction Equipment Emissions Reductions), **MM-AQ-4** (Vehicle Miles Traveled Reduction Strategies), **MM-AQ-5** (Encourage Electric Vehicles), **MM-AQ-6** (Idling Restriction), **MM-AQ-7** (Energy Conservation), **MM-AQ-9** (Electric Forklifts), **MM-AQ-10** (TRU Plug-Ins), **MM-GHG-1** (Water Conservation), and **MM-GHG-2** (Solid Waste Reduction) would reduce Proposed Project-generated GHG emissions. However, even with the implementation of mitigation, impacts would remain **significant and unavoidable** under CEQA.

NEPA Impact Determination

The Proposed Project's GHG contribution would be cumulatively considerable and is potentially significant. Implementation of mitigation measures **MM-AQ-1** (Construction Equipment Emissions Reductions), **MM-AQ-4** (Vehicle Miles Traveled Reduction Strategies), **MM-AQ-5** (Encourage Electric Vehicles), **MM-AQ-6** (Idling Restriction), **MM-AQ-7** (Energy Conservation), **MM-GHG-1** (Water Conservation), and **MM-GHG-2** (Solid Waste Reduction) would reduce Proposed Project-generated GHG emissions. However, even with the implementation of mitigation, effects would remain **adverse** under NEPA.

[9] As explained in Chapter 2.0, Project Description, and Section 3.2, Air Quality, in 2040, the estimated job absorption for the Proposed Project is 4,884; the remaining 6,286 jobs are anticipated to occur after 2040. However, the emission inventory for the Proposed Project, as presented in Table 3.4-3, assumes buildout of the entire GCSP by 2040. Therefore, it is appropriate to assume the full employment projection to estimate an efficiency metric when using full buildout emissions as the basis.

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

Consistency with the City's Sustainable City Action Plan (SCAP)

The SCAP is a City-adopted plan to guide the City in becoming more sustainable. As described in Section 3.4.2.3, the SCAP identifies a wide range of goals and implementation actions to conserve energy and water, reduce solid waste, address global warming, tailor urban design, protect natural habitats, improve transportation options, and reduce risks to human health. Specific goals related to GHG include increasing the use of renewable energy in the City and reducing the City's overall electric load by 10%. Other goals include reducing single-occupancy vehicle trips by 10% and advancing higher density mixed-use neighborhoods that are bike and pedestrian friendly. The potential for the Proposed Project to conflict with the applicable SCAP sustainability goals is provided in Table 3.4-5, Proposed Project Consistency with Applicable SCAP Sustainability Goals.

Table 3.4-5
Proposed Project Consistency with Applicable SCAP Sustainability Goals

Sustainability Goals	Proposed Project Potential to Conflict
Buildings and Neighborhoods	
Create at least 6 new community gardens by 2012	*No conflict.* While the GCSP does not specify community gardens as an encouraged form of open space (because they are typically associated with residential), the Proposed Project would not prevent the City from implementing this measure. Common open space areas may, according to Chapter 5 of the GCSP, include both active and passive recreational activities, which could include a community garden.
Plant at least 10,000 trees in Long Beach by 2020	*No conflict.* While the GCSP does not specify exactly how many trees would be planted in the Proposed Project area as a result of implementation of the GCSP, the GCSP does require that open space areas be provided for all new development and that those areas be landscaped with lush and layered landscaping that provides a variety of larger-scale tree types and medium-scale ornamental and flowering trees that are drought-tolerant. Parking areas shall also be planted with trees according to the City's landscape ordinance.
100% of suitable alley and parking lot projects use permeable pavement by 2020	*No conflict.* The Proposed Project would not conflict within implementation of this goal. Note that many of the Proposed Project asphalt surfaces may not be suitable for permeable pavement.
50% of Long Beach residents work in Long Beach by 2020	*No conflict.* The Proposed Project's addition of jobs within the City will support the goal of increasing Long Beach residents working within Long Beach.
By 2020, at least 30% of Long Beach residents use alternative transportation to get to work	*No conflict.* The Proposed Project's Land Use and Mobility Plan is designed to achieve enhanced connectivity through new streets and pedestrian pathways, and expanded mobility

Table 3.4-5
Proposed Project Consistency with Applicable SCAP Sustainability Goals

Sustainability Goals	Proposed Project Potential to Conflict
	choices through multimodal street improvements. Bicycle facilities and pedestrian improvements are proposed for Cherry Avenue, Wardlow Road, and all new streets in the plan area to help improve connectivity and connect to existing bicycle infrastructure within the vicinity of the plan area, thus offering resident's enhanced and alternative transportation options to get to work in the Proposed Project area. Bike racks and lockers are also requirements of the GCSP.
Energy	
Reduce community electricity use by 15% by 2020	*No conflict.* The Proposed Project's intent is to improve the sustainability of the Plan Area and includes development standards that require low-impact development, drought tolerant landscaping, solar-shaded parking lots, building orientation, and tree canopies. Each of these components individually and collectively work to reduce community electricity consistent with this action.
Reduce community natural gas use by 10 % by 2020	*No conflict.* The Proposed Project would improve sustainability of development within the GCSP, which may reduce natural gas usage. While the GCSP does not include specific natural gas reduction requirements, the Proposed Project would not would not prevent the City from implementing this measure.
Facilitate the development of at least 8 Megawatts of solar energy within the community (private rooftops) by 2020	*No conflict.* Chapter 6 of the GCSP (Design Guidelines) contains a guideline in the General Industrial district, which occupies the majority of parcels west of Cherry Avenue and south of the Interstate 405, to incorporate sustainable surface parking lot design through use of solar shade structures for vehicles, which could contribute to the City's goal of developing at least 8 Megawatts of solar energy in the community.
Green Economy and Lifestyle	
Identify and develop at least 2,000 green collar jobs in Long Beach by 2012	*No conflict.* The Proposed Project is created with the intent of increasing jobs in the City. Based on the estimated buildout of the Proposed Project area, the total number of new jobs in the GCSP is estimated to be 11,170.
Enroll 100 green businesses in the Long Beach Green Business Certification Program by 2012	*No conflict.* The Proposed Project is created with the intent of being a major job generator for the City, which would allow the City to achieve this action in large part through implementation of the GCSP.
Transportation	
Reduce vehicle emissions by 30% by 2020	*No conflict.* The Proposed Project's Land Use and Mobility Plan is designed to reduce vehicle emissions through enhanced connectivity and expanded mobility choices that reduce the need to travel by car between uses and to the Plan area, thus helping to reduce vehicle emissions consistent with this action. Additionally, new development projects, additions, demolitions, rebuilds, and remodels are required to comply with the City's Transportation Demand and Trip Reduction Measures set forth in Section 21.64 of the Zoning Regulations.

Table 3.4-5
Proposed Project Consistency with Applicable SCAP Sustainability Goals

Sustainability Goals	Proposed Project Potential to Conflict
Increase public transit ridership by 25% by 2016	*No conflict.* Chapter 5 of the GCSP contains Transportation and Parking Demand Management measures to encourage the use of public transit. The GCSP lists measures that employers could take to reduce parking and enhance transit ridership, including offering monthly employee credit for car-hailing services and/or transit passes as a means to travel to/from work.
Increase bike ridership from 1% to 10% by 2016	*No conflict.* The Proposed Project's Land Use and Mobility Plan is designed to increase bike ridership. Bicycle facilities are proposed for Cherry Avenue, Wardlow Road, and all new streets in the plan area to help improve connectivity and connect to existing bicycle infrastructure within the vicinity of the plan area. Bike racks and lockers are also requirements of the Plan.
Create a system of at least 200 miles of interconnected bike routes (Class 1-3) by 2020	*No conflict.* The new street section for Cherry Avenue in the GCSP removes on-street parking on both sides of the street and provides a new 11-foot 6-inch Class IV separated bikeway. The new street section for Wardlow Road reduces the width of the through lanes to add a raised Class IV separated bikeway with a vertical or mountable curb. All street improvements in the Plan Area will be consistent with the City's Bicycle Master Plan.
Urban Nature	
Create 100 miles of green linkages by 2020	*No conflict.* The Proposed Project's Land Use and Mobility Plan is designed to achieve enhanced connectivity through new streets and pedestrian pathways. Bicycle facilities and pedestrian improvements are proposed for Cherry Avenue, Wardlow Road, and all new streets in the plan area to help improve connectivity and connect to existing bicycle infrastructure within the vicinity of the plan area, thus contributing to the creation of green linkages in the City's mobility network.
Waste Reduction	
Attract and retain of total of 20 RMDZ manufacturing companies by 2020	*No conflict.* The Proposed Project is created with the intent of being a major job generator for the City. Of the 11,170 new jobs projected to be provided with implementation of the GCSP, 1,659 of them would be in manufacturing, which would allow the City to achieve this action in large part through implementation of the GCSP.
Water	
Reduce per capita use of potable water, exceeding the State mandate to achieve a demand reduction of 20% in per capita water use by the year 2020	*No conflict.* The Proposed Project would encourage water efficiency through requirement of native and drought-tolerant plants for landscaping. Compliance with low-impact development and Model Water Efficient Landscape Ordinance standards is also required per the GCSP.

Table 3.4-5
Proposed Project Consistency with Applicable SCAP Sustainability Goals

Sustainability Goals	Proposed Project Potential to Conflict
Facilitate the development of 50 green roofs communitywide by 2016	*No conflict.* While the Project does not specify green roofs as a requirement, the Project would not prevent the City from encouraging green roofs as a project amenity. Common open space areas may, according to Chapter 5 of the GCSP, include both active and passive recreational activities, which could include a green roof.

Source: City of Long Beach 2010.

As shown in Table 3.4-5, the Proposed Project would not conflict with the applicable sustainability goals of the City's SCAP.

Consistency with the City's Draft Climate Action and Adaptation Plan (CAAP)

As discussed in Section 3.4.2.3, the City is currently in the process of developing a CAAP. Regarding the potential for the Proposed Project to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, the efficiency target of 1.92 MT CO_2e/SP/year is also relevant because the per service population efficiency targets are based on the 2040 reduction targets established for the CAAP and are consistent with the State's target reductions of 40% below 1990 levels by 2030 and the State's 2050 GHG target (AECOM 2019). Because the Proposed Project would exceed the 1.92 MT CO_2e/SP/year threshold, it would not be consistent with the City's draft CAAP.

While the Proposed Project is not anticipated to be consistent with the City's CAAP at a numeric level, a qualitative evaluation of the Proposed Project's potential to conflict with the key sustainability goals of the draft CAAP is conducted for additional disclosure. As discussed previously, to meet and exceed the City's 2030 target, the CAAP identifies 19 priority actions in the following reduction sectors: Transportation, Buildings and Energy, and Waste. The Proposed Project's consistency with the key actions of the draft CAAP is provided in Table 3.4-6, Proposed Project Consistency with Draft CAAP Strategies.

Table 3.4-6
Proposed Project Consistency with Draft CAAP Strategies

Priority Mitigation Action	Proposed Project Potential to Conflict
Transportation	
T-1 Increase frequency, connectivity, and safety of transit options	*No conflict.* While the Proposed Project would not govern the frequency of transit provided to the Proposed Project area, the GCSP's Land Use and Mobility Plan is designed to achieve enhanced connectivity through new streets and pedestrian pathways, and expanded mobility choices through multimodal

Table 3.4-6
Proposed Project Consistency with Draft CAAP Strategies

Priority Mitigation Action	Proposed Project Potential to Conflict
	street improvements. The mobility enhancements would result in greater safety and connectivity to bus stops in the Plan area.
T-2 Increase employment and residential development along primary transit corridors	*No conflict.* Cherry Avenue is a primary transit corridor serving the Proposed Project area and is a central unifying thoroughfare for the GCSP. While the GCSP does not permit residential use, it will provide up to an estimated 11, 170 new jobs in the GCSP, thereby increasing employment along a primary transit corridor.
T-3 Implement the Port of Long Beach Clean Air Action Plan	*Not applicable*. The Proposed Project is not within the Port of Long Beach jurisdiction.
T-4 Increase bikeway infrastructure	*No conflict.* Bicycle facilities and pedestrian improvements are proposed for Cherry Avenue, Wardlow Road, and all new streets in the Plan Area to help improve connectivity and connect to existing bicycle infrastructure within the vicinity of the plan area. The new street section for Cherry Avenue in the GCSP removes on-street parking on both sides of the street and provides a new 11-foot 6-inch Class IV separated bikeway. The new street section for Wardlow Road reduces the width of the through lanes to add a raised Class IV separated bikeway with a vertical or mountable curb. All street improvements in the Plan Area will be consistent with the City's Bicycle Master Plan.
T-5 Expand/improve pedestrian infrastructure citywide	*No conflict.* The Proposed Project's Land Use and Mobility Plan is designed to achieve enhanced pedestrian infrastructure. Pedestrian improvements are proposed for Cherry Avenue, Wardlow Road, and all new streets in the plan area to help improve connectivity, encourage and enhance the walking experience. Projects over 50,000 square feet in the Business Park District are required to incorporate pedestrian connections to expand the overall pedestrian network. The design of pedestrian connections is flexible; however, new pathways should be flanked by landscaping to beautify and provide on-site shading.
T-6 Develop an Electric Vehicle Infrastructure Master Plan	*No conflict.* While the Proposed Project does not provide an Electric Vehicle Infrastructure Master Plan, new development in the plan area is required to provide electric vehicle charging facilities. For all new development at least 3% of the total parking spaces, but not less than one, shall be capable of supporting future electric vehicle supply equipment.
T-7 Update the Transportation Demand Management 0rdinance	*Not applicable*. This action is directed at the City to implement. Nonetheless, the Proposed Project is required to be consistent with the City's Transportation Demand and Trip Reduction Measures set forth in Section 21.64 of the Zoning Regulations.
T-8 Increase density and mixing of land uses	*No conflict.* The Proposed Project supports a mix of land uses in densities compatible with industrial zoning, the Long Beach Airport, and nearby residential neighborhoods. A mix of employment-generating and supportive land uses are permitted on parcels to achieve a campus-like environment that supports the needs of businesses and employees on site.

Table 3.4-6
Proposed Project Consistency with Draft CAAP Strategies

Priority Mitigation Action	Proposed Project Potential to Conflict
T-9 Integrate SB 743 planning with CAAP process	*Not applicable*. This action is directed at the City to implement.
T-10 Identify and implement short-term measures to reduce emissions related to oil and gas extraction	*Not applicable*. The Proposed Project would not include oil and gas extraction activities.
Buildings and Energy	
BE-1 Provide access to renewably generated electricity	*No conflict.* The Proposed Project may include solar rooftops and shade structures over parking areas as individual projects are developed, which would provide access to renewably generated electricity.
BE-2 Develop a home energy assessment program	*Not applicable*. This action is directed at the City. The Proposed Project does not permit residential uses; therefore, the Proposed Project would not apply to the development of a home energy assessment program.
BE-3 Provide access to energy efficiency financing, rebates, and incentives for building owners	*Not applicable*. This action is directed at the City. The Proposed Project is a Specific Plan that does not include access to energy efficiency financing, rebates or incentives to individual business owners.
BE-4 Promote community solar and microgrids	*Not applicable.* This action is directed at the City. The Plan Area is not under single ownership that would enable the development of a microgrid system, and large scale community solar generation is not permitted in the Plan Area as it would not support the primary goal of the GCSP, which is to generate jobs.
BE-5 Perform municipal energy audits	*Not applicable.* This action is directed at the City. The Plan Area is not a municipality that would perform energy audits.
Waste	
W-1 Ensure compliance with state law recycling program requirements for multi-family residential and commercial property	*No conflict.* Individual development projects permitted as part of the Proposed Project will be required to provide recycling services in accordance with state law.
W-2 Develop a residential organic waste collection program	*Not applicable.* The Proposed Project does not include residential development, which is the target of this action.
W-3 Ensure compliance with state law organic waste diversion requirements for multi-family residential and commercial	*No conflict.* Individual development projects permitted as part of the Proposed Project will be required to provide solid waste disposal and divert organic waste diversion in accordance with state law.
W-4 Identify organic waste management options	*Not applicable.* The Proposed Project is a Specific Plan that does not identify project-level organic waste management options, which is more appropriately aimed at City-level implementation.

Source: City of Long Beach 2019c.

As shown in Table 3.4-5, the Proposed Project would not conflict with the applicable sustainability goals of the City's draft CAAP. Nonetheless, as explained above, because the Proposed Project would exceed the numeric efficiency metric threshold to assess

consistency with the City's draft CAAP, the Proposed Project is considered to potentially conflict with the draft CAAP.

Consistency with the SCAG's 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy and 2020 Connect SoCal Regional Transportation Plan/Sustainable Communities Strategy

SCAG's 2016 RTP/SCS is a regional growth-management strategy that targets per capita GHG reduction from passenger vehicles and light-duty trucks in the Southern California region pursuant to SB 375. The 2016 RTP/SCS incorporates local land use projections and circulation networks in city and county general plans. Typically, a project would be consistent with the RTP/SCS if the project does not exceed the underlying growth assumptions within the RTP/SCS. As discussed in Section 3.9, Population and Housing, of this Draft PEIR/PEIS, the GCSP does not include any zoning for residential land uses that could directly induce population growth. While the GCSP does not include plans for residentially zoned areas, which could directly induce population growth, the GCSP does have the potential to induce growth through the increase in the number of jobs available within the Plan Area. While the GCSP could increase the number of jobs available relative to the number of jobs that are currently available, increase in employment during construction and operation are not expected to cause people to move into the City or the County from areas outside the City or County.

In addition to demonstrating the region's ability to attain and exceed the GHG emission-reduction targets set forth by CARB, the 2016 RTP/SCS outlines a series of actions and strategies for integrating the transportation network with an overall land use pattern that responds to projected growth, housing needs, changing demographics, and transportation demands. Thus, successful implementation of the 2016 RTP/SCS would result in more complete communities with a variety of transportation and housing choices, while reducing automobile use. With regard to individual developments, such as the Proposed Project, the strategies and policies set forth in the 2016 RTP/SCS can be grouped into the following three categories: (1) reduction of vehicle trips and VMT; (2) increased use of alternative fuel vehicles; and (3) improved energy efficiency. The Proposed Project's consistency with these three strategy categories is evaluated below.

1. Consistency with VMT Reduction Strategies and Policies

The Proposed Project's consistency with this aspect of the 2016 RTP/SCS is demonstrated via the Proposed Project's land use characteristics and features that would reduce vehicular trips and VMT, as well as the Proposed Project's consistency with the regional growth forecast assumed in the 2016 RTP/SCS for the City. As discussed in Section 3.2.4 (Air Quality, of this PEIR/PEIS, vehicle trip generation and planned development for the Plan

Area are concluded to have been anticipated in the SCAG 2016 RTP/SCS growth projections because the GCSP does not include any zoning for residential land uses that could directly induce population growth, and while the GCSP could increase the number of jobs available relative to the number of jobs that are currently available, increase in employment during construction and operation are not expected to cause people to move into the City or the County from areas outside the City or County. The overall increase in jobs in the Plan Area would not exceed the SCAG projections for the City as a whole.

Per the VMT analysis prepared for the Proposed Project, the existing regional average VMT per employee is 18.5 and the average VMT per employee for the Proposed Project in horizon year 2040 is 13.9 (LSA 2020). As such, the VMT per capita for the Proposed Project is estimated to be 24.8% lower than the regional estimate (LSA 2020). The Proposed Project would not exceed the regional (City) VMT per capita estimates; therefore, the Proposed Project is anticipated to be consistent with 2016 RTP/SCS strategies focused on VMT.

2. Increased Use of Alternative Fueled Vehicles Policy Initiative

The second goal of the 2016 RTP/SCS, with regard to individual development projects such as the Proposed Project, is to increase alternative fueled vehicles to reduce per capita GHG emissions. This 2016 RTP/SCS policy initiative focuses on accelerating fleet conversion to electric or other near zero-emission technologies. The GCSP requires electric vehicle charging stations for all new development in the plan area. At least 3% of the total parking spaces, but not less than one, shall be capable of supporting future electric vehicle supply equipment. As such, the Proposed Project would be consistent with the 2016 RTP/SCS strategies focused on alternative fueled vehicles.

3. Energy Efficiency Strategies and Policies

The third important focus within the 2016 RTP/SCS, for individual developments such as the Proposed Project, involves improving energy efficiency (e.g., reducing energy consumption) to reduce GHG emissions. The 2016 RTP/SCS goal is to actively encourage and create incentives for energy efficiency, where possible. Chapter 6 of the GCSP (Design Guidelines) contains a guideline in the General Industrial district, which occupies the majority of parcels west of Cherry Avenue and south of the I-405, to incorporate sustainable surface parking lot design through use of solar shade structures for vehicles, permeable paving, abundant and interlaced linear landscaping, incorporation of habitable parklets, and incorporation of tree canopies that establish shade and reduce the heat island effect. Compliance with low-impact development and the Model Water Efficient Landscape Ordinance standards will also be required district-wide, which would also reduce energy use associated with water consumption. In addition, the Proposed Project

would be required to comply with the 2019 Title 24 Building Energy Efficiency Standards at a minimum. Therefore, the Proposed Project would be consistent with the 2016 RTP/SCS strategies focused on energy efficiency.

Based on the analysis above, the Proposed Project would be consistent with the strategies contained in the SCAG 2016 RTP/SCS.

On May 7, 2020, SCAG's Regional Council adopted Connect SoCal (2020 - 2045 Regional Transportation Plan/Sustainable Communities Strategy) for federal transportation conformity purposes only. In light of the COVID-19 pandemic, the Regional Council will consider approval of Connect SoCal in its entirety and for all other purposes within 120 days from May 7, 2020.

Connect SoCal is a long-range visioning plan that builds upon and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. It charts a path toward a more mobile, sustainable and prosperous region by making connections between transportation networks, between planning strategies and between the people whose collaboration can improve the quality of life for Southern Californians. Because the Project is not growth inducing, this type of consistency analysis does not apply. However, the major goals of the Connect SoCal are outlined in Table 3.4-7, Project Consistency with the SCAG Connect SoCal RTP/SCS, along with the Project's consistency with them.

Table 3.4-7
Project Consistency with the SCAG Connect SoCal RTP/SCS

RTP/SCS Measure	Proposed Project Potential to Conflict
Encourage regional economic prosperity and global competitiveness.	*Not applicable.* The Proposed Project would not inhibit SCAG from encouraging regional economic prosperity and global competitiveness.
Improve mobility, accessibility, reliability, and travel safety for people and goods.	*Not applicable.* The Proposed Project would not inhibit SCAG from strengthening the regional transportation network for goods movement.
Enhance the preservation, security, and resilience of the regional transportation system.	*Not applicable.* The Proposed Project would not inhibit SCAG from enhancing the resilience of the regional transportation system.
Increase person and goods movement and travel choices within the transportation system.	*Not applicable.* The Proposed Project would not inhibit SCAG from increasing person and goods movement and travel choices within the transportation system.
Reduce greenhouse gas emissions and improve air quality.	*Potential Conflict.* The Proposed Project would result in criteria air pollutant and GHG emissions during construction and operation. The net change in GHG emissions between the Proposed Project and Existing Scenario would exceed the applied numeric thresholds presented in Impact GHG-1. In addition, as presented in Section 3.2, the Proposed Project would not exceed the SCAQMD mass daily significance thresholds for some pollutant during construction and operation.

Table 3.4-7
Project Consistency with the SCAG Connect SoCal RTP/SCS

RTP/SCS Measure	Proposed Project Potential to Conflict
Support healthy and equitable communities.	*No conflict*. The GCSP is designed to achieve a walkable, multi-modal, green and healthy workforce environment through the integration of human-scale blocks that creates a walkable grid of streets and pedestrian connectors flanked by usable open space, fostering an accessible and amenable 21st century employment district.
Adapt to a changing climate and support an integrated regional development pattern and transportation network.	*No conflict*. The GCSP supports an integrated regional development pattern by creating a high-quality regional job center that is adaptive to changing market conditions, and is immediately accessible by a regional transportation network.
Leverage new transportation technologies and data-driven solutions that result in more efficient travel.	*Not applicable.* The Proposed Project would not inhibit SCAG from leveraging technology for the transportation system. However, industrial development under the GCSP would take advantage of new transportation technologies as they are developed.
Encourage development of diverse housing types in areas that are supported by multiple transportation options.	*Not applicable.* The Proposed Project does not include housing and would not inhibit SCAG from encouraging development of diverse housing types.
Promote conservation of natural and agricultural lands and restoration of habitats.	*No conflict.* The Proposed Project would not impact natural lands during construction or operation.

Source: SCAG 2020.

As shown in Table 3.4-7, the project would be consistent with all applicable measures within the SCAG Connect SoCal RTP/SCS.

Consistency with CARB's Scoping Plan

The Scoping Plan (approved by CARB in 2008 and updated in 2014 and 2017) provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. The Scoping Plan is not directly applicable to specific projects, nor is it intended to be used for project-level evaluations.[10] Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-GWP GHGs in consumer products) and changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., Low Carbon Fuel Standard), among others.

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32 and establishes an overall framework for the measures that will be

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

adopted to reduce California's GHG emissions. Table 3.4-8, Proposed Project Consistency with 2008 Scoping Plan GHG Emission Reduction Strategies, highlights measures that have been, or will be, developed under the 2008 Scoping Plan and presents the Proposed Project's consistency with Scoping Plan measures. The Proposed Project would comply with all regulations adopted in furtherance of the Scoping Plan to the extent required by law and to the extent that they are applicable to the Proposed Project.

Table 3.4-8
Proposed Project Consistency with 2008 Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Potential to Conflict
Transportation Sector		
Advanced Clean Cars	T-1	*No conflict.* The Proposed Project's employees and customers would purchase vehicles in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase.
Low Carbon Fuel Standard	T-2	*Not applicable.* This is a statewide measure that cannot be implemented by a project applicant or lead agency. Nonetheless, this standard would be applicable to the fuel used by vehicles that would access the Plan Area (i.e., motor vehicles driven by the Proposed Project's employees and customers and heavy-duty trucks would use compliant fuels).
Regional Transportation-Related GHG Targets	T-3	*Not applicable.* The Proposed Project is not related to developing GHG emission reduction targets. To meet the goals of SB 375, the 2016-2040 RTP/SCS is applicable to the Proposed Project. The Proposed Project would not preclude the implementation of this strategy.
Advanced Clean Transit	N/A	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure. Nonetheless, Chapter 5 of the GCSP contains Transportation and Parking Demand Management measures to encourage the use of public transit. The GCSP lists measures that employers could take to reduce parking and enhance transit ridership, including offering monthly employee credit for car-hailing services and/or transit passes as a means to travel to/from work.
Last-Mile Delivery	N/A	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
Reduction in VMT	N/A	*No conflict.* The Proposed Project would not prevent CARB from implementing this measure. In addition, as explained above, per the VMT analysis prepared for the Proposed Project, the existing regional average VMT per employee is 18.5 and the average VMT per employee for the Proposed Project in horizon year 2040 is 13.9 (LSA 2020). As such, the VMT per capita for the Proposed Project is estimated to be 24.8% lower than the regional estimate (LSA 2020).
Vehicle Efficiency Measures 1. Tire Pressure 2. Fuel Efficiency Tire Program 3. Low-Friction Oil	T-4	*No conflict.* These standards would be applicable to the light-duty vehicles that would access the Plan Area. Motor vehicles driven by the Proposed Project's employees and customers would maintain proper tire pressure when their vehicles are

Table 3.4-8
Proposed Project Consistency with 2008 Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Potential to Conflict
4. Solar-Reflective Automotive Paint and Window Glazing		serviced. The Proposed Project's employees and customers would replace tires in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase. Motor vehicles driven by the Proposed Project's employees and customers would use low-friction oils when their vehicles are serviced. The Proposed Project's employees and customers would purchase vehicles in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase. In addition, the Proposed Project would not prevent CARB from implementing this measure.
Ship Electrification at Ports (Shore Power)	T-5	*Not applicable.* The Proposed Project is not within a Port District and the Proposed Project would not prevent CARB from implementing this measure.
Goods Movement Efficiency Measures 1. Port Drayage Trucks 2. Transport Refrigeration Units Cold Storage Prohibition 3. Cargo Handling Equipment, Anti-Idling, Hybrid, Electrification 4. Goods Movement Systemwide Efficiency Improvements 5. Commercial Harbor Craft Maintenance and Design Efficiency 6. Clean Ships 7. Vessel Speed Reduction	T-6	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
Heavy-Duty Vehicle GHG Emission Reduction • Tractor-Trailer GHG Regulation • Heavy-Duty Greenhouse Gas Standards for New Vehicle and Engines (Phase I)	T-7	*No conflict.* Heavy-duty vehicles would be required to comply with CARB GHG reduction measures. In addition, the Proposed Project would not prevent CARB from implementing this measure.
Medium- and Heavy-Duty Vehicle Hybridization Voucher Incentive Proposed Project	T-8	*No conflict.* The Proposed Project medium- and heavy-duty vehicles (e.g., delivery trucks) could take advantage of the vehicle hybridization action, which would reduce GHG emissions through increased fuel efficiency. In addition, the Proposed Project would not prevent CARB from implementing this measure.
Medium and Heavy-Duty GHG Phase 2	N/A	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
High-Speed Rail	T-9	*Not applicable.* The Proposed Project does not include rail and would not prevent CARB from implementing this measure.
Electricity and Natural Gas Sector		
Energy Efficiency Measures (Electricity)	E-1	*No conflict.* The Proposed Project would comply with the current Title 24 Building Energy Efficiency Standards. Chapter 6 of the GCSP (Design Guidelines) contains a guideline in the General Industrial district, which occupies the majority of parcels west of Cherry Avenue and south of the I-405, to incorporate

Table 3.4-8
Proposed Project Consistency with 2008 Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Potential to Conflict
		sustainable surface parking lot design through use of solar shade structures for vehicles. In addition, the Proposed Project would not prevent CARB from implementing this measure.
Energy Efficiency (Natural Gas)	CR-1	*No conflict.* The Proposed Project would comply with the current Title 24 Building Energy Efficiency Standards. In addition, the Proposed Project would not prevent CARB from implementing this measure.
Solar Water Heating (California Solar Initiative Thermal Program)	CR-2	*No conflict.* The Proposed Project would include solar water heating where feasible.
Combined Heat and Power	E-2	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
Renewables Portfolio Standard (33% by 2020)	E-3	*No conflict*. The electricity used by the Proposed Project would benefit from reduced GHG emissions resulting from increased use of renewable energy sources.
Renewables Portfolio Standard (50% by 2050)	N/A	*No conflict*. The electricity used by the Proposed Project would benefit from reduced GHG emissions resulting from increased use of renewable energy sources.
SB 1 Million Solar Roofs (California Solar Initiative, New Solar Home Partnership, Public Utility Programs) and Earlier Solar Programs	E-4	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
Water Sector		
Water Use Efficiency	W-1	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure. The Proposed Project would encourage outdoor water use efficiency through the requirement of native and drought-tolerant plants for landscaping. Compliance with the Model Water Efficient Landscape Ordinance standards is required by the GCSP.
Water Recycling	W-2	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure. The GCSP requires low-impact development, which manages stormwater runoff as part of green infrastructure.
Water System Energy Efficiency	W-3	*Not applicable.* This is applicable for the transmission and treatment of water, but it is not applicable for the Proposed Project. The Proposed Project would not prevent CARB from implementing this measure.
Reuse Urban Runoff	W-4	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure. As noted above, the GCSP requires low-impact development.
Renewable Energy Production	W-5	*Not applicable.* Applicable for wastewater treatment systems. In addition, the Proposed Project would not prevent CARB from implementing this measure.

Table 3.4-8
Proposed Project Consistency with 2008 Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Potential to Conflict
Green Buildings		
State Green Building Initiative: Leading the Way with State Buildings (Greening New and Existing State Buildings)	GB-1	*No conflict.* The Proposed Project would be required to be constructed in compliance with state or local green building standards in effect at the time of building construction.
Green Building Standards Code (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	*No conflict*. The Proposed Project's buildings would meet green building standards that are in effect at the time of design and construction.
Beyond Code: Voluntary Programs at the Local Level (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	*No conflict*. The Proposed Project's buildings would meet green building standards that are in effect at the time of design and construction.
Greening Existing Buildings (Greening Existing Homes and Commercial Buildings)	GB-1	*No conflict.* This is applicable for existing buildings only; it is not applicable for portions of the Proposed Project except as future standards may become applicable to existing buildings. For Proposed Project building that would be retrofitted, the buildings would meet current applicable building standards at the time of design and construction.
Industry Sector		
Energy Efficiency and Co-Benefits Audits for Large Industrial Sources	I-1	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
Oil and Gas Extraction GHG Emission Reduction	I-2	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
Reduce GHG Emissions by 20% in Oil Refinery Sector	N/A	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
GHG Emissions Reduction from Natural Gas Transmission and Distribution	I-3	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
Refinery Flare Recovery Process Improvements	I-4	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
Work with the Local Air Districts to Evaluate Amendments to Their Existing Leak Detection and Repair Rules for Industrial Facilities to Include Methane Leaks	I-5	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
Recycling and Waste Management Sector		
Landfill Methane Control Measure	RW-1	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
Increasing the Efficiency of Landfill Methane Capture	RW-2	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
Mandatory Commercial Recycling	RW-3	*No conflict.* During both construction and operation of the Proposed Project, the Proposed Project would comply with all state regulations related to solid waste generation, storage, and disposal, including the California Integrated Waste Management Act, as amended.
Increase Production and Markets for Compost and Other Organics	RW-3	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.

Table 3.4-8
Proposed Project Consistency with 2008 Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Potential to Conflict
Anaerobic/Aerobic Digestion	RW-3	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
Extended Producer Responsibility	RW-3	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
Environmentally Preferable Purchasing	RW-3	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
Forests Sector		
Sustainable Forest Target	F-1	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
High GWP Gases Sector		
Motor Vehicle Air Conditioning Systems: Reduction of Refrigerant Emissions from Non-Professional Servicing	H-1	*No conflict.* The Proposed Project's employees would be prohibited from performing air conditioning repairs and would be required to use professional servicing.
SF_6 Limits in Non-Utility and Non-Semiconductor Applications	H-2	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
Reduction of Perfluorocarbons (PFCs) in Semiconductor Manufacturing	H-3	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
Limit High GWP Use in Consumer Products	H-4	*No conflict.* The Proposed Project's employees would use consumer products that would comply with the regulations that are in effect at the time of manufacture.
Air Conditioning Refrigerant Leak Test During Vehicle Smog Check	H-5	*No conflict*. Motor vehicles driven by the Proposed Project's employees and customers would comply with the leak test requirements during smog checks.
Stationary Equipment Refrigerant Management Program – Refrigerant Tracking/Reporting/Repair Program	H-6	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
Stationary Equipment Refrigerant Management Program – Specifications for Commercial and Industrial Refrigeration	H-6	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
SF_6 Leak Reduction Gas Insulated Switchgear	H-6	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
40% Reduction in Methane and Hydrofluorocarbon (HFC) Emissions	N/A	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
50% Reduction in Black Carbon Emissions	N/A	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.
Agriculture Sector		
Methane Capture at Large Dairies	A-1	*Not applicable.* The Proposed Project would not prevent CARB from implementing this measure.

Notes: GHG = greenhouse gas; CARB = California Air Resources Board; VMT = vehicle miles traveled; SB = Senate Bill; N/A = not applicable; SF_6 = sulfur hexafluoride.

Based on the analysis in Table 3.4-8, the Proposed Project would not conflict with the applicable strategies and measures in the 2008 Scoping Plan.

The 2017 Scoping Plan Update reflects the 2030 target of a 40% reduction below 1990 levels codified by SB 32. Table 3.4-9, Project Consistency with 2017 Scoping Plan Climate Change Policies and Measures, evaluates the project's potential to conflict with the 2017 Scoping Plan recommended actions.

Table 3.4-9
Project Consistency with 2017 Scoping Plan Climate Change Policies and Measures

Recommend Action Summary	Lead Agencies	Proposed Project Potential to Conflict
Implement SB 350 by 2030 • Increase Renewable Portfolio Standard • Establish annual targets for statewide energy efficiency • Reduce GHG emissions in the electricity sector	CPUC, CEC, CARB	*No conflict.* This action is directed towards policymakers and would not be directly applicable to the Proposed Project. Nonetheless, the project would improve energy efficiency and reduce electricity-related GHG emissions when replacing older buildings and systems with newer, more efficient buildings and systems.
Implement Mobile Source Strategy (Cleaner Technology and Fuels) • Increase zero emission and plug-in hybrid electric vehicles • Increase GHG stringency on light-duty vehicles beyond Advanced Clean Cars • Medium- and heavy-duty GHG Phase 2 • Innovative Clean Transit • Last Mile Delivery • Further reduce VMT through SB 375 and regional Sustainable Communities Strategy	CARB, CalSTA, SGC, CalTrans CEC, OPR, Local agencies	*No conflict.* The GCSP requires electric vehicle charging stations for all new development in the plan area. At least 3% of the total parking spaces, but not less than one, shall be capable of supporting future electric vehicle supply equipment. Per the VMT analysis prepared for the Proposed Project, the existing regional average VMT per employee is 18.5 and the average VMT per employee for the Proposed Project in horizon year 2040 is 13.9 (LSA 2020). As such, the VMT per capita for the Proposed Project is estimated to be 24.8% lower than the regional estimate (LSA 2020).
Increase stringency of SB 375 Sustainable Communities Strategy (2035 targets)	CARB	*No conflict.* This action is directed towards policymakers and would not be directly applicable to the Proposed Project.
Adjust performance measures used to select and design transportation facilities by 2019	CalSTA and SGC, OPR, CARB, GoBiz, IBank, DOF, CTC, Caltrans	*No conflict.* The action is directed towards CARB and Caltrans and the Proposed Project would not impede implementation.
Develop pricing policies to support low-GHG transportation (e.g., low-emission vehicle zones for heavy duty, road user, parking pricing, transit discounts) by 2019	CalSTA, Caltrans, CTC, OPR/SGC, CARB	*No conflict.* This action is directed towards policymakers and would not be directly applicable to the Proposed Project.
Implement California Sustainable Freight Action Plan	CalSTA, CalEPA, CNRA, CARB, CalTrans, CEC, GoBiz	*No conflict.* The Sustainable Freight Action Plan provides a recommendation on a high-level vision and broad direction to the Governor to consider for State agencies to utilize when developing specific investments, policies, and programs related to the freight transport system that serves our State's transportation, environmental, and economic interests. Heavy-duty trucks associated with Proposed Project operation would comply with the

Table 3.4-9
Project Consistency with 2017 Scoping Plan Climate Change Policies and Measures

Recommend Action Summary	Lead Agencies	Proposed Project Potential to Conflict
		Sustainable Freight Action Plan as applicable once recommendations become rules, regulations, or policies.
Adopt a Low Carbon Fuel Standard with a carbon intensity reduction of 18%	CARB	*No conflict.* This action is directed towards CARB and would not be directly applicable to the Proposed Project. However, emissions associated with Proposed Project vehicle travel would benefit from reductions associated with the Low Carbo Fuel Standard.
Implement the Short-Lived Climate Pollutant Strategy by 2030	CARB, CalRecycle, CDFA, SWRCB, Local air districts	*No conflict.* The Proposed Project would be required to comply with the Short-Lived Climate Pollutant Strategy to the extent it is applicable.
Develop regulations and programs to support organic waste landfill reduction goals in the Short-Lived Climate Pollutant Strategy and SB 1383 by 2019	CARB, CalRecycle, CDFA, SWRCB, Local air districts	*No conflict.* This action is not within the purview of this Proposed Project.
Implement the post-2020 Cap-and-Trade Program with declining annual caps	CARB	*No conflict.* The Proposed Project, which is a Specific Plan, is not subject to the California Cap-and-Trade Program. In addition, no facilities developed under the GCSP are anticipated to be subject to the Cap-and-Trade Program.
Develop Integrated Natural and Working Lands Implementation Plan to secure California's land base as a net carbon sink by 2018	CNRA and departments within, CDFA, CalEPA, CARB	*No conflict.* This action is not within the purview of this Proposed Project. In addition, the Proposed Project involves redevelopment of an existing urban, developed area and implementation of development under the GCSP would is not anticipated to result in land use conversion that would reduce carbon storage.
Establish a carbon accounting framework for natural and working lands as described in SB 859 by 2018	CARB	*No conflict.* This action is not within the purview of this Proposed Project.
Implement Forest Carbon Plan	CNRA, CAL FIRE, CalEPA and departments within	*No conflict.* This action is not within the purview of the Proposed Project. In addition, the Proposed Project includes redevelopment of an existing developed urban area and would not affect forested areas.
Identify and expand funding and financing mechanisms to support GHG reductions across all sectors.	State Agencies & Local Agencies	*No conflict.* This action is not within the purview of the Proposed Project.

Source: CARB 2017.
Notes: CalEPA = California Environmental Protection Agency; CAL FIRE = California Department of Forestry and Fire Protection; CalRecycle = California Department of Resources Recycling and Recovery; CalSTA = California State Transportation Agency; CalTrans = California Department of Transportation; CARB = California Air Resources Board; CDFA = California Department of Food and Agriculture; CEC = California Energy Commission; CNRA = California Natural Resources Agency; CPUC = California Public Utilities Commission; CTC = California Transportation Commission; DOF = Department of Finance; GHG = greenhouse gas; GoBiz = Governor's Office of Business and Economic Development; IBank = California Infrastructure Economic Development Bank; OPR = Governor's Office of Planning and Research; SB = Senate Bill; SGC = Strategic Growth Council; I- = Interstate.

Based on the analysis in Table 3.4-9, the Proposed Project would not conflict with the applicable climate change policies and measures in the 2017 Scoping Plan.

Consistency with EO S-3-05 and SB 32

- **EO S-3-05.** This EO establishes the following goals: GHG emissions should be reduced to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050.
- **SB 32.** This bill establishes for a statewide GHG emissions reduction target whereby CARB, in adopting rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions, shall ensure that statewide GHG emissions are reduced to at least 40% below 1990 levels by December 31, 2030.

This section evaluates whether the GHG emissions trajectory after Proposed Project completion would impede the attainment of the 2030 and 2050 GHG reduction goals identified in EOs B-30-15 and S-3-05.

To begin, CARB has expressed optimism with regard to both the 2030 and 2050 goals. It states in the First Update to the Climate Change Scoping Plan that "California is on track to meet the near-term 2020 GHG emissions limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32" (CARB 2014, p. ES2). With regard to the 2050 target for reducing GHG emissions to 80% below 1990 levels, the First Update to the Climate Change Scoping Plan states the following (CARB 2014, p. 34):

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

In other words, CARB believes that the state is on a trajectory to meet the 2030 and 2050 GHG reduction targets set forth in AB 32, EO B-30-15, and EO S-3-05. This is confirmed in the 2017 Scoping Plan, which states (CARB 2017):

> The Scoping Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while identifying new, technologically feasible and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and

> rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities.

As discussed in Section 3.4.4, total net Proposed Project emissions (after subtracting emissions associated with the existing land uses), including operation and amortized construction, would be approximately 64,166 MT CO_2e per year, resulting in 5.74 MT CO_2e/SP/year (64,166 MT CO_2e/year ÷ 11,170 SP), which would exceed the applied efficiency metric threshold 1.92 MT CO_2e/SP/year for 2040. As such, the Proposed Project (without mitigation) would generate GHG emissions that may interfere with the implementation of GHG reduction goals for 2030 and 2050.

CEQA Impact Determination

Based on the above evaluations, the Proposed Project would potentially conflict with plans, policies, or regulations adopted for the purpose of reducing GHG emissions, and as such, impacts are considered potentially significant. As discussed previously, implementation of mitigation measures **MM-AQ-1** (Construction Equipment Emissions Reductions), **MM-AQ-4** (Vehicle Miles Traveled Reduction Strategies), **MM-AQ-5** (Encourage Electric Vehicles), **MM-AQ-6** (Idling Restriction), **MM-AQ-7** (Energy Conservation), **MM-AQ-9** (Electric Forklifts), **MM-AQ-10** (TRU Plug-Ins), **MM-GHG-1** (Water Conservation), and **MM-GHG-2** (Solid Waste Reduction) would reduce Proposed Project-generated GHG emissions and associated impacts related to the potential to conflict with applicable GHG emissions reduction plans, policies, or regulations. In addition to the various mitigation measures required, as discussed previously, the City is in the process of developing a CAAP to ensure that the City continues on a trajectory that aligns with the short-term, interim, and long-term State GHG reduction goals. Once the CAAP is formally adopted, future project under the GCSP would be required to include a project-level analysis demonstrating consistency with the goals, policies, and standards established under the CAAP. Implementation of the CAAP would contribute to reducing GHG emissions resulting from Proposed Project implementation to the extent applicable to non-residential land use development. However, even with the implementation of mitigation, impacts would remain **significant and unavoidable** under CEQA.

NEPA Impact Determination

As discussed above, the Proposed Project would potentially conflict with plans, policies, or regulations adopted for the purpose of reducing GHG emissions, and as such, effects are considered potentially adverse. As discussed previously, implementation of mitigation measures **MM-AQ-1** (Construction Equipment Emissions Reductions), **MM-AQ-4**

(Vehicle Miles Traveled Reduction Strategies), **MM-AQ-5** (Encourage Electric Vehicles), **MM-AQ-6** (Idling Restriction), **MM-AQ-7** (Energy Conservation), **MM-AQ-8** (Low-VOC-Green Cleaning Product Education Program), **MM-AQ-9** (Electric Forklifts), **MM-AQ-10** (TRU Plug-Ins), **MM-GHG-1** (Water Conservation), and **MM-GHG-2** (Solid Waste Reduction) would reduce Proposed Project-generated GHG emissions and associated effects related to the potential to conflict with applicable GHG emissions reduction plans, policies, or regulations. However, even with the implementation of mitigation, effects would remain **significant and adverse** under NEPA.

3.4.5 Cumulative Impacts

As previously discussed in Section 3.4.1, Existing Conditions, GHG emissions inherently contribute to cumulative impacts, and thus, any additional GHG emissions would result in a cumulative impact. As shown in Tables 3.4-2 and 3.4-3, the Proposed Project would result in GHG emissions that exceed the applied threshold. Therefore, the Proposed Project would result in a cumulatively considerable impact. As such, cumulative impacts are considered **significant and unavoidable**.

3.4.6 Mitigation Measures

As presented in Section 3.2, Air Quality, implementation of mitigation measure **MM-AQ-1** (Construction Equipment Emissions Reductions) would also reduce construction-related GHG emissions. Furthermore, implementation of the following mitigation measures identified to reduce potential air quality impacts (in Section 3.2 in this PEIR/PEIS), would also reduce operation-related GHG emissions: **MM-AQ-4** (Vehicle Miles Traveled Reduction Strategies), **MM-AQ-5** (Encourage Electric Vehicles), **MM-AQ-6** (Idling Restriction), **MM-AQ-7** (Energy Conservation), **MM-AQ-8** (Low-VOC-Green Cleaning Product Education Program), **MM-AQ-9** (Electric Forklifts), and **MM-AQ-10** (TRU Plug-Ins).

In addition, mitigation measures **MM-GHG-1** (Water Conservation) and **MM-GHG-2** Solid Waste Reduction) shall be implemented to reduce GHG emissions generated during operation of the Proposed Project:

MM-GHG-1 Water Conservation. Prior to the issuance of building permits for projects under the GCSP, the project applicant shall provide building plans that include the following water conservation measures:

a) Install low-water use appliances and fixtures

b) Restrict the use of water for cleaning outdoor surfaces and prohibit systems that apply water to non-vegetated surfaces

c) Implement water-sensitive urban design practices in new construction

d) Install rainwater collection systems where feasible.

MM-GHG-2 Solid Waste Reduction. Prior to the issuance of building permits for projects under the GCSP, the project applicant shall provide building plans that include the following solid waste reduction measures:

a) Provide storage areas for recyclables and green waste in new construction, and food waste storage, if a pick-up service is available.

b) Evaluate the potential for on-site composting.

3.4.7 Significance After Mitigation

Implementation of mitigation measures **MM-AQ-1** (Construction Equipment Emissions Reductions), **MM-AQ-4** (Vehicle Miles Traveled Reduction Strategies), **MM-AQ-5** (Encourage Electric Vehicles), **MM-AQ-6** (Idling Restriction), **MM-AQ-7** (Energy Conservation), **MM-AQ-8** (Low-VOC-Green Cleaning Product Education Program), **MM-AQ-9** (Electric Forklifts), **MM-AQ-10** (TRU Plug-Ins), **MM-GHG-1** (Water Conservation), and **MM-GHG-2** (Solid Waste Reduction)would reduce construction and operational GHG emissions; however, due to the lack of project-specific information, the effectiveness in reducing construction and operational GHG emissions cannot be accurately quantified. Nonetheless, the potential for future development under the Proposed Project to generate GHG emissions that may have a significant impact on the environment and conflict with an applicable GHG-reduction plan, policy, or regulation is considered **significant and unavoidable** during both construction and operation.

3.4.8 References

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

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3.5 HAZARDS AND HAZARDOUS MATERIALS

This section describes the existing hazards setting of the Globemaster Corridor Specific Plan (GCSP; Proposed Project) site and vicinity, identifies associated regulatory requirements, and analyzes the Proposed Project's impacts to hazards and hazardous materials. The following discussion focuses on the existing hazards and hazardous materials in the City of Long Beach (City) and more specifically, the Plan Area.

The Initial Study (IS) and Notice of Preparation (NOP) are contained in Appendix A-1, Initial Study; and Appendix A-2, Notice of Preparation, respectively. No comments pertaining to hazards and hazardous materials were received in response to the NOP (see Appendix A-3, Notice of Preparation Comment Letters).

The IS found that the Proposed Project would have a less than significant impact as it relates to private airstrips, adopted emergency response and evacuation plans, and wildland fires (Appendix A-1). As such, these impacts will not be addressed further in this Draft Program Environmental Impact Report (PEIR)/Draft Program Environmental Impact Statement (PEIS).

3.5.1 Existing Conditions

This analysis is based on review of available hazards and hazardous materials reports, websites, and maps of the Plan Area and vicinity, including reports and information posted on websites by the State Water Resources Control Board (SWRCB), the Department of Toxic Substances Control (DTSC), and the Division of Oil, Gas, and Geothermal Resources (DOGGR), as well as information gathered from historic aerial photographs.

Historic Uses of the Plan Area

Historic Topographic Maps

The Plan Area, as shown on four historic topographic maps (NETR 2018), is discussed below.

1899: The Union Pacific Railroad is located along the Plan Area's western boundary and is oriented north-south. A riparian feature is located in the southwest portion of the Plan Area. Bixby Road crosses the northern portion of the Plan Area in its current day location. There are no structures within the Plan Area

1925: The Cities of Signal Hill and Long Beach experience some development to the south and southwest of the Plan Area. Numerous oil wells occur within the northern portion of Signal Hill, immediately south of the Plan Area. Cherry Avenue and Spring Street are located in their present-day locations. Some structures occur within the southernmost portions of the Plan Area along Spring Street.

1966: Interstate-405 (I-405) and the Long Beach Municipal Airport are developed. Some industrial development occurs along Cherry Avenue, Spring Avenue, and the I-405 freeway within the Plan Area. The riparian feature shown in the 1899 topographic maps has been filled in by this time and numerous oil wells exist within the southwestern portions of the Plan Area.

1987: Industrial land use patterns established in prior years continue and the majority of the Plan Area has been built out by this time.

Historic Aerial Photographs

The Plan Area, as shown on historic aerial photographs from 1953, 1963, and 1994 (NETR 2018), is described below.

1953 (shows Western Portion of Plan Area): The Long Beach Municipal Airport has been constructed by this time. Much of the southern area has been developed for industrial, aviation-related, and oil-related uses, while some of the northern portions of the site are moderately developed for industrial uses. Several above ground storage tanks are located within the southwestern portion of the Plan Area. Portions of the Union Pacific Railroad are left intact, but as evidenced by structures placed within the railway's right of way outside of the Plan Area, the railroad is no longer functioning.

1963 (shows entire Plan Area): Similar land use patterns occur with an intensification of industrial land uses patterns occurring within the northern portion of the Plan Area. Grading for the I-405 is underway.

1994 (shows entire Plan Area): The majority of the Plan Area had been built out by this time with the entirety of the Plan Area being utilized for industrial, aviation-related, and oil-related purposes.

Environmental Database Listings

As noted in historical topographic and aerial photographs, a wide array of industrial and commercial activities have occurred within the Plan Area dating back to the late 19th century. Given the nature of these uses, there exists the possibility for hazardous materials to have been released into the environment at various sites. A search of environmental databases maintained by state and federal agencies revealed that there are several sites that contain potentially hazardous contaminants in soil and groundwater. The majority of these listings do not identify hazardous material releases, but identify current or historic uses of hazardous materials where there is, or was, some potential for release – including hazardous waste generators and existing or historic underground storage tanks. Table 3.5-1, Hazardous Material Databases Reviewed, summarizes the databases that were searched as part of this analysis.

Table 3.5-1
Hazardous Material Databases Reviewed

Database	Acronym	Type of Sites Listed	Agency Maintaining Database
Comprehensive Environmental Response, Compensation, and Liability Information System	CERCLIS	Potentially hazardous waste sites that have been reported to the USEPA.	US Environmental Protection Agency (EPA)
CERCLIS – No Further Remedial Action Planned	CERC-NFRAP	Hazardous materials release sites (or suspected release sites) removed from CERCLIS sites list; No Further Remedial Action Planned.	EPA
Resource Conservation and Recovery Act – Corrective Action Sites	CORRACTS	Hazardous waste handlers with Corrective Action activity.	EPA
RCRA – Treatment, Storage, and Disposal Facilities	RCRA-TSDF	Sites that treat, store, or dispose of hazardous wastes.	EPA
RCRA – Small Quantity Generators	RCRA-SQG	Small quantity generators of hazardous wastes (generate between 100 kg and 1,000 kg of hazardous waste per month)	EPA
RCRA – Non-generators	RCRA NonGen / NLR	Non-generators: do not presently generate hazardous waste.	EPA
US Institutional Controls	US INST CONTROL:	Institutional controls (e.g., land use restrictions).	EPA
Emergency Response Notification System	ERNS	Reported hazardous materials releases.	US Coast Guard
US Brownfields	US Brownfields	Sites redeveloped/reused after hazardous materials cleanup.	EPA
Mines Master Index File	US Mines	Coal and metal/non-metal mines	US Department of Labor
Solid Waste Facilities/Land Fill Sites	SWF/LF	Solid waste facilities/Landfill Sites.	Department of Resources Recycling and Recovery
National Pollution Discharge Elimination System	NPDES	Permits for discharges to waters of the U.S.	State Water Resources Control Board (SWRCB)
Underground Injection Wells	UIC	Underground injection wells (oil & gas wells).	CA Dept. of Conservation
California Waste Discharge System	CA WDS	Waste discharge requirements.	State Water Resources Control Board
EnviroStor Database	Envirostor	Hazardous waste sites	DTSC
Historical	Hist Cortese	Historical UST sites	DTSC
Recycling Facilities in California Database	SWRCY	Solid waste recycling facilities.	CA Dept. of Conservation
Leaking Underground Storage Tank List	LUST	Leaking Underground Storage Tank.	SWRCB
Historical Leaking Underground Storage Tank	Hist LUST	Historical USTs	SWRCB
California Underground Storage Tank Facility Inventory Database	CA FID UST	Historical USTs	SWRCB

Table 3.5-1
Hazardous Material Databases Reviewed

Database	Acronym	Type of Sites Listed	Agency Maintaining Database
Statewide Environmental Evaluation and Planning System	SWEEPS UST	Historical USTs	SWRCB
Division of Oil, Gas, and Geothermal Resources	DOGGR	Oil, natural gas, and geothermal wells	CA Dept. of Conservation

Proximity to Schools

The following schools are located within 0.25 mile of the Plan Area:

Kindergarten through High School

- Burroughs Elementary School (1260 E. 33rd Street, Signal Hill); located adjacent to Plan Area (but not within Plan Area)
- Westerly School of Long Beach (950 E 29th Street, Long Beach); located approximately 300 feet south of the Plan Area

Secondary Schools

- DeVry University (3880 Kilroy Airport Way); located within Plan Area
- Keller Graduate School of Management – Long Beach Center (3880 Kilroy Airport Way); located within Plan Area

3.5.2 Regulatory Setting

Federal

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as "Superfund," was enacted by Congress on December 11, 1980. This law provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA also enabled the revision of the National Contingency Plan. The National Contingency Plan provides the

guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The National Contingency Plan also established the National Priorities List, which is a list of contaminated sites warranting further investigation by the EPA. CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986.

The Federal Toxic Substances Control Act of 1976 and Resource Conservation and Recovery Act of 1976

The Federal Toxic Substances Control Act of 1976 and RCRA (1976) established a program administered by the EPA for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act, which affirmed and extended the "cradle-to-grave" system of regulating hazardous wastes. The use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by the Hazardous and Solid Waste Act.

Airport Safety

The Federal Aviation Administration (FAA) has primary responsibility for the safety of civil aviation. The FAA's major functions regarding hazards consist of the following: developing and operating a common system of air traffic control and navigation for civil and military aircraft, developing and implementing programs to control aircraft noise and other environmental effects of civil aviation, regulating U.S. commercial space transportation, and conducting reviews to determine that the safety of persons and property on the ground are protected. Federal law requires that the FAA determine whether a structure that is proposed to be built or altered, 200 feet above ground level (AGL) or higher, or near an airport, does not pose a hazard to the airspace.

State

Title 22 of the California Code of Regulations & Hazardous Waste Control Law, Chapter 6.5

The Department of Toxic Substances Control (DTSC) regulates the generation, transportation, treatment, storage, and disposal of hazardous waste under RCRA and the California Hazardous Waste Control Law. Both laws impose "cradle to grave" regulatory systems for handling hazardous waste in a manner that protects human health and the environment. CalEPA has delegated some of its authority under the Hazardous Waste Control Law to county health departments and other Certified Unified Program Agencies.

California Safety and Health Code

In California, the handling and storage of hazardous materials is regulated by Division 20, Chapter 6.95 of the California Health and Safety Code. Under Sections 25500–25543.3, facilities handling hazardous materials are required to prepare a Hazardous Materials Business Plan. Hazardous Materials Business Plans contain basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of in the state.

Chapter 6.95 of the Health and Safety Code establishes minimum statewide standards for Hazardous Materials Business Plans. Each business shall prepare a Hazardous Materials Business Plan if that business uses, handles, or stores a hazardous material (including hazardous waste) or an extremely hazardous material in disclosable quantities greater than or equal to the following:

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

In addition, in the event that a facility stores quantities of specific acutely hazardous materials above the thresholds set forth by the California Health and Safety Code, facilities are also required to prepare a Risk Management Plan and California Accidental Release Plan. The Risk Management Plan and Accidental Release Plan provide information on the potential impact zone of a worst-case release and require plans and programs designed to minimize the probability of a release and mitigate potential impacts.

Occupational Safety and Health Act

The California Occupational Safety and Health Administration (Cal/OSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal/OSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR 337–340). The regulations specify requirements for employee training, availability of safety equipment, accident prevention programs, and hazardous substance exposure warnings.

Hazardous Materials Worker Safety

Cal/OSHA and the federal Occupational Safety and Health Administration are the agencies responsible for ensuring worker safety by developing and enforcing workplace safety regulations

in the handling and use of chemicals in the workplace. Cal/OSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR 337–340). The regulations specify requirements for employee training, availability of safety equipment, accident prevention programs, and hazardous substance exposure warnings.

Local

Los Angeles County Hazardous Waste Management Plan

The City is required to follow applicable portions of the Los Angeles County Hazardous Waste Management Plan (HWMP). The County's HWMP was prepared in response to various federal and state laws mandating better government oversight and management and restricting direct land disposal of untreated hazardous wastes in distant, out-of-County facilities. The HWMP aims to encourage and facilitate the establishment of needed hazardous waste programs and facilities in cities and in unincorporated communities by the private sector to minimize untreated hazardous wastes leaving the County and to ensure that all future hazardous waste disposal will be accommodated in environmentally safe, effective, and economical facilities and managed and handled in a cooperative, balanced, and multi-faceted fashion among government, the private sector, and the public.

City of Long Beach

Medical Waste Management Act

The Medical Waste Management Act (MWMA) establishes the methods for handling, tracking, record keeping, hauling and disposal of medical waste by all medical generators and other handlers of medical waste. The California Health and Safety Code authorizes the City of Long Beach to implement the MWMA and to collect fees to cover the expenses of administering the program. The Long Beach Department of Health and Human Services, (LBHHS), Bureau of Environmental Health is responsible for administering and enforcing the MWMA. As defined in the MWMA, registration and/or permitting by the local enforcement agency (LEA) is required for medical-waste generating facilities that perform on-site treatment of medical waste, produce greater than 200 pounds per month of medical waste, or store medical wastes from multiple small generators prior to disposal using a registered hazardous waste transporter. Qualifying medical waste generation facilities may be granted a Limited Quantity Hauling Exemption (LQHE), which provides an exemption for health care professionals to transport small amounts of medical waste (20 pounds per week) without having to meet registered haulers requirements (LBHHS 2015).

Municipal Code

In the City, the Long Beach Fire Department (LBFD) and Long Beach Bureau of Environmental Health (LBBEH) jointly function as the Certified Unified Program Agency (CUPA). Title 8, Health and Safety, of the Long beach Municipal Code, (Municipal Code) addresses codes and measures regarding hazardous materials. Chapter 8.85 (underground and aboveground Storage Tanks) designates the City to prevent injury or damage to businesses or property due to air pollution. Chapter 8.86 (Hazardous Materials release Response Plans and Inventory) designates the Long Beach CUPA as the local authority for underground and aboveground storage tank compliance. Chapter 8.87 (Hazardous Waste Control) designates the Long Beach CUPA as the local authority to enforce California Health and Safety Code Division 20, Chapter 6.5. Chapter 8.88 (Hazardous Materials Clean Up) requires site characterization, site remediation, and initial and final reports for contaminated sites in accordance with state and local laws and regulations.

General Plan Public Safety Element

The City's General Plan Public Safety Element was adopted in May 1975 and includes policy guidelines related to the City's safety goals, fire protection, geologic hazards, crime prevention, utilities, industrial/transportation, disaster operations, and risk management, and also includes program and ordinance recommendations. The fire protection section of the Public Safety Element presents established fire demand zones determined on the basis of hazards, station locations, manpower, and equipment. Specific fire hazardous land uses are delineated, and fire protection measures are recommended. Through the City's Department of Emergency Preparedness, elaborate provisions for disaster operations have been established where manpower, communications, evacuation, community resources, and safety for citizens are discussed and reviewed. The Risk Management section of the Public Safety Element discusses factors related to risk management and the process of establishing levels of acceptable risk regarding a variety of potential hazards, including oil storage tanks and tank rupture. The Public Safety Element is a planning document that primarily addresses hazards that could affect large segments of the population and does not include specific regulatory requirements.

3.5.3 Thresholds of Significance

The following thresholds of significance are based on Appendix G of the State CEQA Guidelines. Based on these thresholds, implementation of the Proposed Project would have a significant adverse impact related to hazards and hazardous materials if it would:

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

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

C. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school

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 create a significant hazard to the public or the environment

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, result in a safety hazard for people residing or working in the project area

The IS found that the Proposed Project would have a less than significant impact as it relates to private airstrips, adopted emergency response and evacuation plans, and wildland fires (Appendix A-1). As such, these impacts will not be addressed further in this Draft PEIR/ PEIS.

3.5.4 Impacts Analysis

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

and

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?

Hazardous Materials Associated with Project Construction

The following section discusses impacts associated with construction of the Proposed Project, including demolition, grading, and construction activities.

Demolition Activities

Future development and redevelopment projects pursuant to the GCSP may require the demolition of existing buildings and structures associated with the specific development site. Due to the age of the buildings and structures throughout the Plan Area (many over 50 years old), it is likely that asbestos-containing materials (ACM) and lead-based paints (LBP), as well as other building materials containing lead (e.g., ceramic tile), were used in their construction. Demolition of these building and structures can cause encapsulated ACM (if present) to become friable and, once airborne, they are considered a carcinogen.[1]

[1] When dry, an ACM is considered friable if it can be crumbled, pulverized, or reduced to powder by hand pressure. If it cannot, it is considered non-friable ACM. It is possible for non-friable ACM to become friable when subjected to unusual conditions, such as demolishing a building or removing an ACM that has been glued into place.

A carcinogen is a substance that causes cancer or helps cancer grow. Demolition of the existing buildings and structures can also cause the release of lead into the air if not properly removed and handled. The United States Environmental Protection Agency (EPA) has classified lead and inorganic lead compounds as "probable human carcinogens" (EPA 2013). Such releases could pose significant risks to persons living and working in and around the Plan Area, as well as to project construction workers.

Abatement of all ACM and LBP encountered during any future building demolition activities would be required to be conducted in accordance with all applicable laws and regulations, including those of the EPA (which regulates disposal); US Occupational Safety and Health Administration; US Department of Housing and Urban Development; Cal/OSHA (which regulates employee exposure), and South Coast Air Quality Management District (SCAQMD).

For example, Cal/OSHA's regulations for exposure of construction employees to ACMs require that demolition materials be handled and transported in the same manner as other, non-friable ACMs. The EPA requires that all asbestos work performed within regulated areas be supervised by a competent person who is trained as an asbestos supervisor (EPA Asbestos Hazard Emergency Response Act, 40 CFR 763). SCAQMD's Rule 1403 requires that buildings undergoing demolition or renovation be surveyed for ACM prior to any demolition or renovation activities. Should ACM be identified, Rule 1403 requires that ACM be safely removed and disposed of at a regulated site, if possible. If it is not possible to safely remove ACM, Rule 1403 requires that safe procedures be used to demolish the building with asbestos in place without resulting in a significant release of asbestos. Additionally, during demolition, grading, and excavation, all construction workers would be required to comply with the requirements of Title 8 of the California Code of Regulations, Section 1529 (Asbestos), which provides for exposure limits, exposure monitoring, respiratory protection, and good working practices by workers exposed to asbestos.

Cal/OSHA Regulation 29 (CFR Standard 1926.62) regulates the demolition, renovation, or construction of buildings involving lead-based materials. It includes requirements for the safe removal and disposal of lead, and the safe demolition of buildings containing LBP or other lead materials. Additionally, during demolition, grading, and excavation, all construction workers would be required to comply with the requirements of Title 8 of the California Code of Regulations, Section 1532.1 (Lead), which provides for exposure limits, exposure monitoring, respiratory protection, and good working practice by workers exposed to lead.

However, to further prevent impacts from the potential release of ACM or LBP associated with individual development projects under the GCSP, an ACM and LBP survey of existing buildings and structures would be required prior to demolition activities, as outlined in mitigation measure **MM-HAZ-1**. Per mitigation measure **MM-HAZ-1**, if ACM or LBP are encountered during the survey, the abatement, containment, and disposal of such materials shall be conducted in accordance with the applicable regulatory measures. Implementation of mitigation measure **MM-HAZ-1** would ensure that future persons performing demolition activities on the Plan Area are not adversely affected by the release of potentially hazardous materials currently present on-site.

Therefore, through compliance with all applicable laws and regulations, as well as the implementation of mitigation measure **MM-HAZ-1**, significant hazardous impacts related to the release of ACMs and LBP would not occur. Compliance with these laws, regulations, and mitigation measure would be ensured through the City's development review and building plan check process.

Grading Activities

Grading activities of the individual future development projects that would be accommodated by the GCSP would involve the disturbance of on-site soils. Soils on certain parcels of the Plan Area could be contaminated with hazardous materials due to current and historical commercial land uses. For example, a parcel located within the central portion of the Plan Area, known as the former Boeing C-17 facility site, has been identified by the SWRCB as a site requiring remediation activities due to past activities that have resulted in the soil contamination. Some remediation activities have already been completed, and further action is planned by the current owner in collaboration with the SWRCB. Additionally, previous oil production-related uses located throughout the Plan Area, including the several above-ground storage tanks located within the southwestern portion of the Plan Area, may have inadvertently resulted in the release of contaminants over time (e.g., via leaking underground and above ground storage tanks).

Exposure of contaminated soils to workers and the surrounding environment would result in a significant impact. Any contaminated soils encountered on individual development sites would be required to be removed prior to grading activities and disposed of off-site in accordance with all applicable regulatory guidelines.

However, to ensure that impacts from potential contaminated on-site soils do not occur, the implementation of mitigation measure **MM-HAZ-2** would be required for future development projects. Per mitigation measure **MM-HAZ-2**, project applicants of future development projects would be required to submit a Phase I Environmental Site

Assessment (ESA) prior to the issuance of project approvals; the Phase I ESA would identify any potential environmental conditions of a development site and determine whether contamination is present. If contamination is determined to be present on future development sites, the implementation of mitigation measure **MM-HAZ-2** would require that all contaminated soils and/or materials encountered be disposed of at a regulated site in accordance with applicable laws and regulations prior to the completion of grading. In conformance with applicable laws and regulations, any remediation activities would be performed by licensed hazardous materials handlers and would be performed pursuant to a Remedial Action Plan approved by the applicable State agency with jurisdiction over the potential contamination to ensure that remediation crews are not exposed to potential contaminants in the soil. Prior to the issuance of building permits, a report documenting the completion, results, and any follow-up remediation on the recommendations, if any, shall be provided to the City of Long Beach Development Services Department evidencing that all site remediation activities have been completed. With the implementation of mitigation measure **MM-HAZ-2**, the potential for future occupants to disturb potentially contaminated soils would be reduced to a less-than-significant level.

Therefore, through required adherence with existing regulations and implementation of mitigation measure **MM-HAZ-2**, significant impacts as a result of encountering contaminated on-site soils during future project grading activities would not occur. Future compliance with existing regulations and mitigation measure **MM-HAZ-2** would be ensured through the City's development review and building plan check process.

Construction Activities

Construction of development and redevelopment projects pursuant to the GCSP would involve the use of hazardous materials, such as fuels, lubricants, and greases in construction equipment and coatings used in construction. However, the materials used would not be in such quantities or stored in such a manner as to pose a significant safety hazard. These activities would also be short term or one time in nature. Additionally, as with project operation, the use, transport, and disposal of construction-related hazardous materials would be required to conform to existing laws and regulations. Compliance with applicable laws and regulations governing the use, storage, and transportation of hazardous materials would ensure that all potentially hazardous materials are used and handled in an appropriate manner and would minimize the potential for safety impacts to occur. For example, all spills or leakage of petroleum products during construction activities are required to be immediately contained, the hazardous material identified, and the material remediated in compliance with applicable state and local regulations. All contaminated waste would be required to be collected and disposed of at an appropriately licensed disposal or treatment facility. Furthermore, strict adherence to all emergency response plan requirements set

forth by the LBFD and LBBEH would be required through the duration of the construction of each individual development project. Therefore, substantial hazards to the public or the environment arising from the routine use of hazardous materials during project construction would not occur, and impacts are not anticipated to be significant.

Hazardous Materials Associated with Project Operation

Future development in the Plan Area would be guided by the Land Use and Mobility Plan of the GCSP. The Land Use and Mobility Plan would create six development districts and two overlay zones that would allow various uses throughout the Plan Area. The six development districts and two overlays include a Business Park (BP) district, Community Commercial (CC) district, Industrial Commercial (IC) district, General Industrial (IG) district, Airport (AP) district, Open Space (OS) district, Cherry Avenue Overly Zone, and Airport Environs Overlay Zone. The allowed uses within each development district are further detailed in Chapter 2.0, Project Description, of this Draft PEIR/PEIS.

Each development district would allow various uses based on compatibility with neighboring uses within each district. Uses can vary in intensity, from recreational facilities within the Open Space district, to chemical manufacturing plants in Industrial Commercial district.

The use, storage, transport, and disposal of hazardous materials by land uses pursuant to the GCSP would be governed by existing regulations set forth by several agencies. Regulations that would be required of those uses that involve transporting, using or disposing of hazardous materials include RCRA, which provides the 'cradle to grave' regulation of hazardous wastes; CERCLA, which regulates closed and abandoned hazardous waste sites; the Hazardous Materials Transportation Act, which governs hazardous materials transportation on U.S. roadways; the International Fire Code (IFC), which creates procedures and mechanisms to ensure the safe handling and storage of hazardous materials; CCR Title 22, which regulates the generation, transportation, treatment, storage and disposal of hazardous waste; and CCR Title 27, which regulates the treatment, storage and disposal of solid wastes. For development within the State of California, Government Code Section 65850.2 requires that no final certificate of occupancy or its substantial equivalent be issued unless there is verification that the owner or authorized agent has met, or is meeting, the applicable requirements of the Health and Safety Code, Division 20, Chapter 6.95, Article 2, Sections 25500 through 25520.

The Long Beach FD and Long Beach BEH jointly function as the CUPA for the City, and are responsible for enforcing Chapter 6.95 (Hazardous Materials Release Response Plans and Inventory) of the Health and Safety Code. As the CUPA, LBFD and BEH are required to regulate hazardous materials business plans and chemical inventory, hazardous waste and

tiered permitting, underground storage tanks, and risk-management plans. The Hazardous Materials Business Plan is required to contain basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of on development sites. The plan also contains an emergency-response plan, which describes the procedures for mitigating a hazardous release, procedures, and equipment for minimizing the potential damage of a hazardous materials release, and provisions for immediate notification of the LBFD, BEH the Office of Emergency Services, and other emergency-response personnel, such as the local fire agency having jurisdiction. Implementation of the emergency response plan facilitates rapid response in the event of an accidental spill or release, thereby reducing potential adverse impacts. Furthermore, BEH is required to conduct ongoing routine inspections to ensure compliance with existing laws and regulations; to identify safety hazards that could cause or contribute to an accidental spill or release; and to suggest preventative measures to minimize the risk of a spill or release of hazardous substances.

Medical waste that would be generated by any future health care and medical office uses that would be accommodated by the GCSP would be required to adhere to the provisions of the MWMA, which are administered and enforced by LBHHS. Under the MWMA, the City requires anyone operating a business that generates medical waste to obtain a permit, which is issued by LBHHS to ensure quality and enforcement of regulations.

Compliance with applicable laws and regulations governing the use, storage, transport, and disposal of hazardous materials would ensure that all potentially hazardous materials associated with future development accommodated by the GCSP are used and handled in an appropriate manner and would minimize the potential for safety impacts. Compliance with these laws and regulations is ensured through the City's development review and building plan check process. Therefore, hazards to the public or the environment arising from an accidental release of hazardous materials during project operation are not anticipated to occur.

Furthermore, any future development projects that would be permitted under the GCSP would be subject to the City's planning entitlement process. The City's development review process would include verification of land use compatibility compliance in accordance with the development standards of the GCSP and City's Zoning Regulations (Title 21 of the Long Beach Municipal Code). Additionally, the GCSP and City's Zoning Regulations provide a list of allowable uses that are customized for highly urbanized areas of the City, such as the Plan Area, thereby minimizing the potential for future workers and visitors to be exposed to uses that could potentially handle hazardous materials. For example, uses permitted by right in the Plan Area are considered compatible with future uses that would occur adjacent to development sites. Therefore, through compliance with applicable Federal, State, and local regulations and plans, impacts associated with the handling of hazardous materials would be less than significant.

Summary

CEQA Impact Determination

In summary, under CEQA, impacts associated with the Proposed Project potentially creating a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials would be less than significant with the incorporation of mitigation measures **MM-HAZ-1** and **MM-HAZ-2**. Additionally, impacts associated with the Proposed Project potentially creating 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 would be less than significant through compliance with applicable regulatory requirements. As such, impacts are **less than significant with mitigation incorporated** during both construction and operation of future projects under the GCSP.

NEPA Impact Determination

In summary, under NEPA, effects associated with the Proposed Project potentially creating a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials are potentially significant and adverse. Mitigation measures **MM-HAZ-1** and **MM-HAZ-2** would reduce these **effects to below a level of significance**. Additionally, effects associated with the Proposed Project potentially creating 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 would **not be adverse** through compliance with applicable regulatory requirements, during both construction and operation of future projects under the GCSP.

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?

As discussed previously, there are four schools located within 0.25 mile of the Plan Area.

The proposed GCSP would permit a wide variety of land uses within the Plan Area. It would establish the necessary plans, development standards, regulations, infrastructure requirements, design guidelines, and implementation programs on which subsequent, Proposed Project-related development activities would be founded. It is intended that local public works projects, design review plans, detailed site plans, grading and building permits, or any other action requiring ministerial or discretionary approval applicable to the Plan Area be consistent with the proposed GCSP. As such, future construction and operation of developments within the Plan Area have the potential to result in the accidental upset of hazardous materials, including within 0.25 mile of existing schools.

However, any new developments permitted under the proposed GCSP that handle or use hazardous materials would be required to comply with regulations and standards established by the EPA, State of California, and the City of Long Beach. Specifically, any new business is required to submit a full hazardous materials disclosure report. This includes an inventory of hazardous materials used, generated, stored, handled, or emitted; emergency response plans; evacuation plan; and a training program for personnel. The Long Beach Fire Department conducts yearly inspections of all businesses to ensure business plans are in order. In addition, hazardous spills and accidents are subject to the emergency procedures of the Long Beach Fire Department's Hazardous Materials Division and/or the City of Long Beach's Local Hazard Mitigation Plan. The Office of Emergency Services has published a Multi-Hazard Mitigation Plan that discusses the historical occurrences of natural disaster–triggered hazardous material releases, along with a description of the current regulations, response actions, and reporting requirements for such releases in the future.

CEQA Impact Determination

In conclusion, all on-site activities, during both operation and construction, would be required to adhere to federal, state, and local regulations for the management and disposal of hazardous materials, and all hazardous materials handled within one-quarter mile of schools would be properly managed. Therefore, compliance with federal, state, and local regulations would ensure that impacts associated with the emission of hazardous or acutely hazardous materials, substances, and wastes within one-quarter mile of existing schools are **less than significant** under CEQA. No mitigation is required.

NEPA Impact Determination

In conclusion, all on-site activities, during both construction and operation, would be required to adhere to federal, state, and local regulations for the management and disposal of hazardous materials, and all hazardous materials handled within one-quarter mile of schools would be properly managed. Therefore, compliance with federal, state, and local regulations would ensure that **no adverse effects** associated with the emission of hazardous or acutely hazardous materials, substances, and wastes within one-quarter mile of existing schools would occur under NEPA.

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 create a significant hazard to the public or the environment?

As stated previously, there are a number of sites and facilities in the Plan Area that are listed in hazardous materials sites databases. A search of environmental databases

maintained by state and federal agencies revealed that there are several sites that contain potentially hazardous contaminants in soil and groundwater. The majority of these listings do not identify hazardous material releases, but identify current or historic uses of hazardous materials where there is, or was, some potential for release – including hazardous waste generators and existing or historic underground storage tanks (see Table 3.5-1, Hazardous Material Databases Reviewed). Most of the cases have been closed; site assessments and/or remediation have been conducted on most of the open cases.

However, due to the fact that there are numerous sites within and in proximity of the Plan Area that have been listed in a hazardous materials database, the potential for impacts exist from hazardous substance contamination. Individual future development projects permitted by the GCSP may be impacted by hazardous substance contamination remaining from historical operations on a particular portion of the overall Plan Area, which may pose a significant health risk resulting in a significant impact.

Properties contaminated with hazardous substances are regulated at the federal, state, and local level, and are subject to compliance with stringent laws and regulations for investigation and remediation. For example, compliance with the CERCLA, RCRA, California Code of Regulations, Title 22, and related requirements would remedy any potential impacts caused by hazardous substance contamination. Future development projects accommodated by the GCSP would be required to comply with these existing laws and regulations. Additionally, an ACM and LBP survey would be required (in accordance with mitigation measure **MM-HAZ-1**) prior to the commencement of future demolition activities within the Plan Area, and a Phase I ESA would be required (in accordance with mitigation measure **MM-HAZ-2**) for land purchasers to qualify for the Innocent Landowner Defense under CERCLA and to minimize environmental liability under other laws such as RCRA; and as a lender prerequisite to extend a loan for purchase of land. Phase I ESAs are also conducted to establish an environmental baseline before a lease of land. Phase I ESAs for future development projects pursuant to the GCSP would identify whether recognized environmental conditions are present on the proposed development site. If such conditions are present on-site, the site assessments would recommend sampling and testing of soil, soil vapor, and/or groundwater (as needed) to determine whether contaminants are present on or under the site at levels exceeding regulatory agency screening levels for the proposed type of land use. Where contaminant levels are identified at concentrations above screening levels, health risk assessments would be required to be conducted to identify whether project development would expose project residents, workers, or visitors to substantial health risks. If substantial health risks arising from environmental contamination on, under, or near the site were identified, cleanup of such contamination would be required before the City of Long Beach would issue a certificate of occupancy for such projects.

CEQA Impact Determination

Under CEQA, with the incorporation of mitigation measures **MM-HAZ-1** and **MM-HAZ-2**, as detailed above, impacts associated with potentially contaminated sites would be **less than significant with mitigation incorporated**.

NEPA Impact Determination

Under NEPA, effects associated with potentially contaminated sites are potentially significant and adverse prior to the implementation of mitigation. Mitigation measures **MM-HAZ-1** and **MM-HAZ-2**, as detailed above, have been identified to reduce these effects to below a level of significance so that there are **no adverse effects**.

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

Most of the Plan Area is under imaginary surfaces regulating obstructions to navigable airspace surrounding Long Beach Airport pursuant to FAA Part 77 regulations for Imaginary Surfaces. Figure 2-7, Height Districts, establishes the height district for each parcel in the Plan Area, with a range of 30 feet to 153 feet. Height restrictions range from a maximum of 36 feet in areas closest to the airport, to a maximum of 176 feet towards the outer boundaries of the Plan Area.

As shown on Figure 2-7, Height District A is concentrated in the Central Core Area of the GCSP on the east side of Cherry Avenue, near the location of the existing Globemaster C-17 Hangar which is approximately 100 feet in height for reference. The remainder of the Height Districts in the GCSP would establish maximum building heights at 65 feet or less. All future development within the City, including within the Plan Area, would be required to conform to the proposed height restrictions. During the plan check process, the City would review all development applications and plans to ensure consistency with FAA Part 77, and an aeronautical study may be required to determine whether the proposed structure would be an obstruction to navigable airspace. The height of development is subject to compatibility with the airport land use and applicable restrictions of the Caltrans Airport Land Use Planning Handbook and FAA Federal Aviation Regulations. Development projects in the FAA regulated height areas that are near or approach height limits, or any structures over certain elevations above ground level, would be required to file a Notice of Proposed Construction or Alteration with the FAA and otherwise provide compliance as required by the Federal Aviation Regulations and conformance to the recommendations of the Caltrans Airport Land Use Planning Handbook. A project would not be permitted to proceed to the construction phase until compatibility with all applicable federal and local requirements related to air traffic and airport operations is demonstrated to the satisfaction of the City.

CEQA Impact Determination

Through compliance with FAA Part 77 regulations, impacts associated with airport safety hazards for people residing or working in the Plan Area would be **less than significant** under CEQA. No mitigation is required.

NEPA Impact Determination

Through compliance with FAA Part 77 regulations, **no adverse effects** associated with airport safety hazards for people residing or working in the Plan Area would occur under NEPA.

3.5.5 Cumulative Impacts

The area considered for cumulative hazards and hazardous materials impacts is the City of Long Beach and the adjacent portions of the Cities of Lakewood and Signal Hill.

Accidental Release of Hazardous Materials

The construction and operation of other planned development projects in the City of Long Beach, in accordance with the City's General Plan, would involve the use, store, transport, and dispose of hazardous materials. Such use and handling of hazardous materials could create risks of accidental release if the materials were not used, stored, transported, and disposed of safely. However, as with the proposed GCSP, hazardous materials associated with other planned development projects would be required to be used, stored, transported, and disposed of in compliance with existing regulations set forth and enforced by numerous agencies, including LBFD, BEH, LBHHS, EPA, USDOT, SCAQMD, OSHA, and Cal/OSHA. Impacts would be less than significant. Moreover, through compliance with regulatory requirements and the implementation of mitigation measures **MM-HAZ-1** and **MM-HAZ-2**, the proposed GCSP would not result in any hazardous conditions with regard to building materials or soil contamination and would not combine with other planned development projects to result in a cumulatively considerable impact with respect to these potential hazards. Therefore, the proposed GCSP's contribution to cumulative impacts related to hazardous materials and waste or the creation of any health hazards would not be significant, and therefore, be **less than cumulatively considerable with mitigation incorporated**.

Listed Hazardous Materials Sites

Other planned development projects in the City of Long Beach, in accordance with the City's General Plan, would involve redevelopment or reuse of sites that could be listed as hazardous materials sites. Ground disturbances at such sites, and redevelopment or reuse with structures for human occupancy on such sites, could create hazards for people and/or the environment. However,

as with the proposed GCSP, other planned development projects would be required to comply with existing regulations requiring the preparation of Phase I ESAs; and, where such ESAs identify recognized environmental conditions, sampling and testing of soil, soil vapor, and/or groundwater for contaminants; and remediation as needed. Therefore, the proposed GCSP's contribution to cumulative impacts related to hazardous materials sites listings would not be significant and therefore, be **less than cumulatively considerable**.

Navigable Airspace Surrounding Long Beach Airport

Other planned development projects in the City of Long Beach, in accordance with the City's General Plan, may occur in the area surrounding Long Beach Airport where heights of structures are regulated to avoid obstructions to navigable airspace pursuant to FAA Part 77 regulations. As previously shown in Figure 2-4, General Plan Land Use Designations (see Chapter 2.0, Project Description, of this Draft PEIR/PEIS), portions of the General Plan are located within height standards approved by Resolution 19-0189. Compliance with the General Plan height standards in areas around the Long Beach Airport would ensure other planned development projects proposing structures would not exceed such elevation limits. The FAA would conduct an aeronautical study to determine whether the proposed structure would be an obstruction to navigable airspace. Local land use control is under the jurisdiction of the City of Long Beach, not the FAA. The City is responsible for ensuring that development of proposed structures does not create obstructions to navigable airspace. Therefore, the proposed GCSP's contribution to cumulative impacts related to airport-related hazards would not be significant and therefore, be **less than cumulatively considerable**.

3.5.6 Mitigation Measures

MM-HAZ-1 Prior to the issuance of demolition permits for any buildings or structures that would be demolished in conjunction with individual development projects that would be accommodated by the Globemaster Corridor Specific Plan, the project applicant/developer shall conduct the following inspections and assessments for all buildings and structures on site and shall provide the City of Long Beach Development Services Department with a copy of the report of each investigation or assessment.

1. The project applicant shall retain a California Certified Asbestos Consultant (CAC) to perform abatement project planning, monitoring (including air monitoring), oversight, and reporting of all asbestos-containing materials (ACM) encountered. The abatement, containment, and disposal of all ACM shall be conducted in accordance with the South Coast Air Quality Management District's Rule 1403 and California Code of Regulation Title 8, Section 1529 (Asbestos).

2. The project applicant shall retain a licensed or certified lead inspector/assessor to conduct the abatement, containment, and disposal of all lead waste encountered. The contracted lead inspector/assessor shall be certified by the California Department of Public Health (CDPH). All lead abatement shall be performed by a CDPH-certified lead supervisor or a CDPH-certified worker under the direct supervision of a lead supervisor certified by CDPH. The abatement, containment, and disposal of all lead waste encountered shall be conducted in accordance with the US Occupational Safety and Health Administration Rule 29, CFR Part 1926, and California Code of Regulation, Title 8, Section 1532.1 (Lead).
3. Evidence of the contracted professionals attained by the project applicant shall be provided to the City of Long Beach Development Services Department. Additionally, contractors performing ACM and lead waste removal shall provide evidence of abatement activities to the City of Long Beach Building and Safety Bureau.

MM-HAZ-2 Prior to the issuance of project entitlements or grading permits (whichever occurs first) for individual development projects that would be accommodated by the Globemaster Corridor Specific Plan, the project applicant/developer shall submit a Phase I Environmental Site Assessment (ESA) to the City of Long Beach Development Services to identify environmental conditions of the development site and determine whether contamination is present. The Phase I ESA shall be prepared by a Registered Professional Engineer and in accordance with the American Society for Testing and Materials (ASTM) Standard E 1527.13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. If recognized environmental conditions related to soils are identified in the Phase I ESA, the project applicant shall perform soil sampling as a part of a Phase II ESA. If contamination is found at significant levels, the project applicant shall remediate all contaminated soils in accordance with state and local agency requirements (California Department of Toxic Substances Control, Regional Water Quality Control Board, Long Beach Fire Department, etc.). All contaminated soils and/or material encountered shall be disposed of at a regulated site and in accordance with applicable laws and regulations prior to the completion of grading. Prior to the issuance of building permits, a report documenting the completion, results, and any follow-up remediation on the recommendations, if any, shall be provided to the City of Long Beach Development Services Department evidencing that all site remediation activities have been completed.

3.5.7 Significance after Mitigation

Compliance with regulatory requirements and implementation of mitigation measures identified above (**MM-HAZ-1** and **MM-HAZ-2**) would reduce potential impacts associated with hazards and hazardous materials to a **less than significant** level.

3.5.8 References

City of Long Beach. 2002. General Plan Public Safety Element. Adopted 2002. http://www.longbeach.gov/globalassets/lbds/media-library/documents/planning/advance/general-plan/public-safety.

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United States Environmental Protection Agency (EPA). 2013. Lead Compounds. http://www.epa.gov/airtoxics/hlthef/lead.html.

FAA (Federal Aviation Administration). 2015. "FAA Updates Airspace Obstructions Standards." Last updated December 8, 2015. Accessed August 14, 2018. https://www.faa.gov/news/updates/?newsId=84336.

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3.6 HYDROLOGY AND WATER QUALITY

This section describes the hydrologic and water quality setting of the Globemaster Corridor Specific Plan (GCSP; Proposed Project) site and general vicinity, identifies associated regulatory requirements, and analyzes the Proposed Project's impacts to hydrology and water quality. The following discussion focuses on the existing hydrologic and water quality resources in the City of Long Beach (City) and more specifically, the Plan Area.

The Initial Study (IS) and Notice of Preparation (NOP) are contained in Appendix A-1, Initial Study; and Appendix A-2, Notice of Preparation, respectively. Comments regarding hydrology and water quality were not received in response to the NOP (see Appendix A-3, Notice of Preparation Comment Letters).

The IS found that the Proposed Project would have no impact as it relates to 100-year flood hazards and less than significant impacts as it relates to flooding as a result of the failure of a levee, failure of a dam, seiche, tsunami, or mudflow (Appendix A-1). As such, these impacts will not be addressed further in this Draft Program Environmental Impact Report (PEIR)/Draft Program Environmental Impact Statement (PEIS).

3.6.1 Existing Conditions

Regional Watershed

The Plan Area overlaps the boundary between the Los Cerritos Channel/Alamitos Bay Watershed and the Los Angeles River Watershed, with the majority of the Plan Area being located in the former. The Los Cerritos Watershed is a small watershed located between the Los Angeles and San Gabriel rivers, which drains to the same general area as the San Gabriel River. The Los Cerritos Channel is concrete-lined above the tidal prism and drains a relatively small area of east Long Beach. The southwest portion of the Plan Area is located in the Los Angeles River Watershed, which is one of the largest in the region at 824 square miles. The 55-mile long river is also one of the most diverse in terms of land use patterns. Approximately 324 square miles of the watershed are covered by forest or open space land, including the area near the headwaters, which originate in the Santa Monica, Santa Susana, and San Gabriel mountains. The remainder of the watershed is highly developed (LARWQCB 2018a).

Topography and Drainage

The topography of the northern and eastern portions of the Plan Area, generally north of the 405 Freeway, is relatively flat to gently sloping toward the east-southeast. Drainage flows toward regional flood control channels/drains located along Spring Street and east of Charlemagne Avenue. And as described above, this area drains toward the Cerritos Channel and the same general

area as the San Gabriel River. The southern portion of the Plan Area, generally south of the freeway, mostly slopes gently to the northeast. The topographic gradient increases slightly in this area adjacent to Signal Hill, located to the southwest. The extreme southwest portion of the Plan Area, generally west of Orange Avenue, slopes gently to moderately to the west, toward the Los Angeles River, with localized steep slopes along the northwestern perimeter of Signal Hill.

Surface Water Quality

The Plan Area overlaps the boundary between the Los Cerritos Channel/Alamitos Bay Watershed Management Area (i.e., the Los Cerritos WMA) and the Los Angeles River Watershed Management Area (i.e., Los Angeles River WMA), with the majority of the Plan Area being located in the former. A majority of land use in the Los Cerritos WMA is high-density residential; therefore, nonpoint source runoff from storm drains is a likely water quality issue in the watershed. Pathogens, metals, and various organic pollutants contribute to the impairments found in the WMA. In addition, of the 43 dischargers enrolled under the General Industrial Storm Water Permit in the Los Cerritos WMA, the majority occur in the City of Long Beach. Many of these businesses are involved with trucking/warehousing, transportation equipment, and fabricated metal products (LARWQCB 2018a).

Similarly, pollutants from dense clusters of residential, industrial, and other urban activities in the Los Angeles River WMA have impaired water quality in the middle and lower watershed. Added to this complex mixture of pollutant sources (in particular, pollutants associated with urban and stormwater runoff), is the high number of point source permits. Excessive nutrients (and their effects) and coliform are widespread problems in the watershed, as well as excessive metals. Water column toxicity was found at a number of sites sampled by the Surface Water Ambient Monitoring Program (SWAMP), in 2005. Of the 1,319 dischargers enrolled under the General Industrial Storm Water Permit in the watershed, the largest numbers occur in the cities of Los Angeles, Vernon, South Gate, Long Beach, Compton, and Commerce. Wholesale trade-durable goods, fabricated metal products, trucking/warehousing, and chemicals/allied products are a large component of these businesses (LARWQCB 2018a).

A number of Regional Board programs and actions are in place to address the water quality impairments discussed above. Total Maximum Daily Loads (TMDLs) have been developed, as required by the Clean Water Act, for many of the impairments in the watersheds. The TMDL is a number that represents the assimilative capacity of a receiving water to absorb a pollutant and is the sum of the individual waste load allocations for point sources, load allocations for nonpoint sources, plus an allotment for natural background loading. TMDLs can be expressed in terms of mass per time (the traditional approach), or in other ways such as toxicity, or a percentage reduction, or other appropriate measures relating to a water quality objective. A TMDL is implemented by reallocating the total allowable pollution among the different pollutant sources (through the permitting process or

other regulatory means) to ensure that the water quality objectives are achieved. TMDLs in effect for the Los Cerritos WMA include those for metals in Los Cerritos Channel and for pesticides, polyaromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and metals in Colorado Lagoon. Similarly, TMDLs in effect in all or parts of the Los Angeles River WMA include those for nutrients, bacteria, metals, and trash (LARWQCB 2018a).

Groundwater

Groundwater is the primary source of drinking water in Long Beach. The Long Beach Water Department (LBWD) pumps groundwater through 29 active wells, located throughout the service area. LBWD pumps groundwater from an adjudicated groundwater basin, the Central Basin Aquifer. Under the adjudication, LBWD currently has the right to extract 32,692 acre-feet per year (AFY) of groundwater. The Central Basin aquifer underlies 277 square miles of mostly urbanized southern Los Angeles County. The Central Basin is bounded on the north by a surface divide known as the La Brea High, and on the northeast and east by the Elysian, Repetto, Merced, and Puente Hills. The southeast boundary between the Central Basin and Orange County Groundwater Basin roughly follows Coyote Creek, and the southwest boundary is formed by the Newport-Inglewood Fault Zone. The LBWD also has an adjudicated right to pump 0.7 AFY from the adjacent West Coast Basin, but is currently not exercising the West Coast Basin right (i.e., has no wells in the basin) (City of Long Beach 2016).

3.6.2 Regulatory Setting

Federal

Clean Water Act

The Clean Water Act (CWA) (33 U.S.C. 1251 et seq.), as amended by the Water Quality Act of 1987, is the major federal legislation governing water quality. The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Key sections of the act are as follows:

- Sections 303 and 304 provide for water quality standards, criteria, and guidelines. Under Section 303(d) of the CWA, the State of California is required to develop a list of impaired water bodies that do not meet water quality standards and objectives and establish TMDLs for each pollutant/stressor.
- Section 401 (Water Quality Certification) requires an applicant for any federal permit that proposes an activity which may result in a discharge to waters of the United States, to obtain certification from the state that the discharge will comply with other provisions of the CWA.

- Section 402 establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredged or fill material) into waters of the United States. This permit program is administered by the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs), who have several programs that implement individual and general permits related to construction activities, stormwater runoff quality, and various kinds of non-stormwater discharges.
- Section 404 establishes a permit program for the discharge of dredged or fill material into waters of the United States. This permit program is jointly administered by the U.S. Army Corps of Engineers and the Environmental Protection Agency (EPA).

Numerous agencies have responsibilities for administration and enforcement of the CWA. At the federal level this includes the EPA and the U.S. Army Corps of Engineers. At the state level, with the exception of tribal lands, the California EPA and its sub-agencies, including the SWRCB, have been delegated primary responsibility for administering and enforcing the CWA in California.

State

Porter-Cologne Act

The Porter–Cologne Act (codified in the California Water Code, Section 13000 et seq.) is the primary water quality control law for California. Whereas the CWA applies to all waters of the United States, the Porter–Cologne Act applies to waters of the state, which includes isolated wetlands and groundwater, in addition to federal waters. The Porter–Cologne Act is implemented by the SWRCB and the nine RWQCBs. In addition to other regulatory responsibilities, the RWQCBs have the authority to conduct, order, and oversee investigation and cleanup where discharges or threatened discharges of waste to waters of the state[1] could cause pollution or nuisance, including impacts to public health and the environment.

The Porter–Cologne Act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or otherwise) to land or surface waters that may impair a beneficial use of surface or groundwater of the state. California Water Code Section 13260 subdivision (a) requires that any person discharging waste or proposing to discharge waste, other than to a community sewer system, which could affect the quality of the waters of the state, to file a Report of Waste Discharge with the applicable RWQCB. For discharges directly to surface water (waters of the United States), an NPDES permit is required, which is issued under both state and federal law. For other types of discharges, such as waste discharges to land (e.g., spoils disposal and storage), erosion from soil disturbance, or discharges to waters of the state (such as groundwater and isolated wetlands), Waste Discharge Requirements (WDRs) are required and are

[1] "Waters of the state" are defined in the Porter–Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code, Section 13050(e)).

issued exclusively under state law. WDRs typically require many of the same best management practices (BMPs) and pollution control technologies as required by NPDES-derived permits.

Basin Planning

The California legislature has assigned the primary responsibility to administer and enforce statutes for the protection and enhancement of water quality, including the Porter–Cologne Act and portions of the CWA, to the SWRCB and its nine RWQCBs. The SWRCB provides state-level coordination of the water quality control program by establishing statewide policies and plans for implementation of state and federal regulations. The nine RWQCBs throughout California adopt and implement Basin Plans that recognize the unique characteristics of each region with regard to natural water quality, actual and potential beneficial uses, and water quality problems. The Los Angeles RWQCB is responsible for the protection of the beneficial uses of waters within the coastal watersheds of Los Angeles and Ventura counties, including the Plan Area.

The *Water Quality Control Plan, Los Angeles Region, Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan) designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan (California Water Code Sections 13240–13247) (Los Angeles RWQCB 2014). The Los Angeles RWQCB Basin Plan must conform to the policies set forth in the Porter-Cologne Act as established by the SWRCB in its state water policy. The Porter-Cologne Act also provides the RWQCBs with authority to include within their Basin Plan water discharge prohibitions applicable to particular conditions, areas, or types of waste. The Basin Plan is continually being updated to include amendments related to implementation of TMDLs, revisions of programs and policies within the Los Angeles RWQCB region, and changes to beneficial use designations and associated water quality objectives.

Construction General Permit (SWRCB Order 2009-0009-DWQ, as amended)

For stormwater discharges associated with construction activity in the State of California, the SWRCB has adopted the *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit) to avoid and minimize water quality impacts attributable to such activities. The Construction General Permit applies to all projects in which construction activity disturbs one acre or more of soil. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling and excavation. The Construction General Permit requires the development and implementation of a stormwater pollution prevention plan (SWPPP), which would include and specify water quality BMPs designed to prevent pollutants from contacting stormwater and keep all products of erosion from moving off site into receiving waters. Routine inspection of all BMPs

is required under the provisions of the Construction General Permit, and the SWPPP must be prepared and implemented by qualified individuals as defined by the SWRCB.

The Statewide General Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality (SWRCB Order No. 2003-0003-DWQ)

This general order applies to projects that discharge to land where the discharge has a low threat to water quality. These are typically low-volume discharges with minimal pollutant concentrations such as well water discharges, small temporary dewatering projects, and hydrostatic testing discharges of clear water. The primary difference between this permit and the permits under the NPDES program is the destination of the water. This permit regulates discharges to land and the previous sections discuss discharges to storm drains or receiving waters. For instance, if a dewatering discharge will be piped to an infiltration basin during construction, this permit could apply.

Local

Municipal NPDES Permit

The City of Long Beach is subject to the *Waste Discharge Requirements for Municipal Separate Storm Sewer System Discharges from the City of Long Beach* (Permit No. R4-2014-0024, NPDES No. CAS004003) (MS4 Permit), which was approved February 6, 2014, and became effective on March 28, 2014. This MS4 Permit supersedes Order No. 99-060, issued in 1999. To implement the requirements of the 1999 MS4 Permit, the City developed the Long Beach Storm Water Management Program, a comprehensive program of practices and activities aimed at reducing or eliminating storm water pollutants from new development, to the maximum extent practicable. This program includes customized strategies, control measures, BMPs, consistent with the Los Angeles RWQCB Watershed Management Areas.

The City has the option of collaborating with other MS4 permittees on the development of an Enhanced Watershed Management Program, which evaluates the multi-benefits of regional projects and implements regional control measures and BMPs. The Watershed Management Program includes an evaluation of existing water quality conditions, identifying water quality priorities within each WMA, selecting watershed control measures, and incorporating compliance schedules. Since 2015, the following watershed management plans have been approved and are currently being implemented: Long Beach Nearshore, Los Cerritos Channel Watershed, Lower Los Angeles River Watershed, and Lower San Gabriel River (LARWQCB 2018b).

Currently, the MS4 permit requires that the project designer and/or contractor of all new development and redevelopment projects that fall under specific "priority" project categories must develop a Standard Urban Stormwater Mitigation Plan (SUSMP). Certain categories of development are considered "priority" because the Los Angeles RWQCB determined that these

categories have the greatest potential to degrade water quality. The three categories of "priority" projects include: 1) 10 or more home subdivisions; 2) 100,000 square feet or larger commercial developments; and 3) projects located adjacent to or directly discharging to environmentally sensitive areas. Future development projects occurring under the Proposed Project would be designed in accordance with a SUSMP.

City of Long Beach General Plan Conservation Element (1973)

Water resource management goals are included in the Conservation Element (adopted in 1973) of the City's General Plan. The following goals are applicable to the Proposed Project:

> **Water Resource Management Goal 1:** To assure adequate quantity and quality of water to meet the present and future domestic, agricultural, and industrial needs of the City.
>
> **Water Resource Management Goal 2:** To enforce existing ordinances and develop new ordinances and promote continuing research directed toward achieving the required stringent water quality standards which regulate waste water effluent discharge to ocean waters, bays and estuaries, fresh waters, and groundwater.
>
> **Water Resource Management Goal 3:** To assure that the waters of San Pedro and Alamitos bays and Colorado Lagoon are maintained at the highest quality feasible, in order to enhance their recreational and commercial utilization.

2019 General Plan Land Use Element

Strategy No. 20: Preserve, restore and protect water bodies, natural areas and wildlife habitats.

> **LU Policy 20-5:** Prevent stormwater runoff and pollutants from entering natural water bodies, wildlife habitats, wetlands, rivers and the Pacific Ocean.
>
> **LU Policy 20-11:** Coordinate with other agencies to reduce stormwater runoff by capturing runoff for groundwater recharge, irrigation and recycling purposes.

Sustainable City Action Plan (2010)

The City adopted the Sustainable City Action Plan on February 2, 2010, with the purpose of moving the City towards becoming a more sustainable City. Sustainability is defined in this plan as maximizing individual benefits and minimizing negative environmental impacts, to ensure the long-term health of the environment, for the enjoyment and use of current and future generations. The Sustainable City Action Plan includes initiatives, goals, and actions that are meant to guide City decision-makers in striving towards achieving a sustainable City. The following initiatives and actions are applicable to the Proposed Project:

Water Initiative 2: Implement low impact development strategies to reduce runoff and pollution at the source and increase the beneficial use of rainwater.

Water Action 1: Aggressively pursue strategies to keep trash off our beaches and pollution out of our ocean.

Water Action 2: Continue to manage urban and stormwater runoff by installing emerging treatment technologies into the storm drain system.

Water Action 3: Continue to work with upstream cities in the Los Angeles River Watershed to implement BMPs in the watershed to reduce pollutant loadings.

Water Action 4: Pursue legislation and secure funding to mitigate surface water and groundwater pollution.

Water Action 5: Participate in and promote beach, neighborhood, community, and business corridor cleanups in order to keep our watersheds and beaches clean.

Water Action 6: Encourage the use of development techniques to direct rooftop runoff to pervious areas, such as yards, garden beds, vegetated/soft bottom open channels, or on-site structural BMPs for capture, treatment, and reuse.

Water Action 7: Design streets to direct rainwater runoff to landscaped areas.

Water Action 8: Utilize and/or replace non-pervious surfaces with permeable materials (e.g., sidewalks, driveways, outdoor patios, and parking lots).

Water Action 10: Update development standards to require low impact development strategies, such as detention basins, infiltration basins, infiltration trenches, conservation of natural areas, permeable pavements, treatment wetlands, bioswales, curb cuts, green roofs, rain gardens, and other pre-/post-construction BMPs.

Water Action 11: Expand Stormwater Management Education and Outreach programs to a watershed-based program and develop public-private educational partnerships to promote behavioral change.

Long Beach Municipal Code

Chapter 8.96. Stormwater and Runoff Pollution Control: This chapter reinforces the requirements of the Federal Clean Water Act and the State Porter Cologne Act, including the Construction General Permit requirements, within the City.

3.6.3 Thresholds of Significance

The following significance criteria are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.), and will be used to determine the significance of potential hydrology and water quality impacts. Since the release of the IS (September 2018), updates to the CEQA Guidelines have gone into effect. One of the revisions involves slight changes to the threshold questions related to hydrology and water quality. As such, the threshold questions listed here do not match the IS. Impacts related to hydrology and water quality would be significant if the Proposed Project would:

A. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

B. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

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;

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

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

   iv. Impede or redirect flood flows.

D. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

E. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

The IS found that the Proposed Project would have less than significant impacts as it relates to flood hazard areas, because the Plan Area: 1) is not located within a designated 100-year flood hazard area; 2) is not located within an area subject to inundation as a result of failure of a levee or dam; and 3) is not located within an area subject to inundation by seiche, tsunami, or mudflow (Appendix A-1, Initial Study). Therefore, impacts related to flood hazard areas are not further discussed in this Draft PEIR/PEIS.

3.6.4 Impacts Analysis

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Buildout of the GCSP would result in demolition and grading, followed by vertical building construction, paving/concrete installation, and landscape installation. Each of these Proposed Project-related activities would result in potential soil erosion, which in turn could result in siltation of receiving water bodies, including the Cerritos Channel, Los Angeles River, and downstream Los Angeles/Long Beach Harbor. In addition, during the construction phase(s) of the Proposed Project, petroleum hydrocarbons in site runoff could result from incidental spills during construction equipment/vehicle fueling or maintenance. During Proposed Project operations, nonpoint source runoff of pollutants such as oil, grease, and metals in parking and vehicle maintenance areas; incidental spills of hazardous materials from industrial facilities; pesticides, herbicides, nitrogen, and phosphorous in landscape areas; and miscellaneous pathogens (bacteria), trash, and debris could occur at the Plan Area.

As previously discussed, the Plan Area overlaps the boundary between the Los Cerritos WMA and the Los Angeles River WMA, with the majority of the Plan Area being located in the former. A majority of land uses in the Los Cerritos WMA is high-density residential; therefore, nonpoint source runoff from storm drains is a likely water quality issue in the watershed. Pathogens, metals, and various organic pollutants contribute to the impairments found in the WMA. In addition, of the 43 dischargers enrolled under the General Industrial Storm Water Permit in the Los Cerritos WMA, the majority occur in the City of Long Beach. TMDLs in effect for the Los Cerritos WMA include those for metals in Los Cerritos Channel and for pesticides, PAHs, PCBs, and metals in Colorado Lagoon.

Similarly, pollutants from dense clusters of residential, industrial, and other urban activities in the Los Angeles River WMA have resulted in water quality impairment in the middle and lower watershed. Added to this complex mixture of pollutant sources (in particular, pollutants associated with urban and stormwater runoff), is the high number of point source permits. Excessive nutrients (and their effects) and coliform are widespread problems in the watershed, as well as excessive metals. TMDLs in effect in all or parts of the Los Angeles River WMA include those for nutrients, bacteria, metals, and trash.

Currently, the MS4 permit requires that the project designer and/or contractor of all new development and redevelopment projects that fall under specific "priority" project categories must develop a SUSMP. Certain categories of development are considered "priority" because the Los Angeles RWQCB determined that these categories have the greatest potential to

degrade water quality. The three categories of "priority" projects include: 1) 10 or more home subdivisions; 2) 100,000 square feet or larger commercial developments; and 3) projects located adjacent to or directly discharging to environmentally sensitive areas. Future development projects occurring under the Proposed Project would be designed in accordance with a SUSMP.

All development in the watersheds would be subject to the existing regulatory requirements to protect water quality and minimize increases in stormwater runoff. Mitigation measures **MM-HYD-1a** and **MM-HYD-1b** outlines the requirements for preparation of a SWPPP and compliance with the established Best Management Practices (BMPs). Furthermore, mitigation measure **MM-HYD-1c** requires all construction activities to comply with the City of Long Beach, Stormwater Management Plan in order to reduce potential erosion induced siltation of off-site water bodies. The Proposed Project would also require implementation of mitigation measures **MM-HYD-2a** and **MM-HYD-2b**, which mandates development of a SUSMP during project design in order to reduce impervious surfaces and increase on-site filtration of contaminants in stormwater runoff. With incorporation of mitigation, the project would be in compliance with applicable water quality standards and/or waste discharge requirements that would avoid the degradation of surface or groundwater quality. The existing built environment within the Plan Area was constructed prior to current water quality and stormwater regulations. Redevelopment of the area is anticipated to improve on-site retention, treatment, and conveyance of stormwater during operational aspects of the project.

CEQA Impact Determination

Proposed Project-related nonpoint source runoff associated with future construction and operation of projects under the GCSP could potentially exacerbate existing surface water pollution in the already impaired Los Cerritos WMA and Los Angeles River WMA. As such, mitigation measure **MM-HYD-1a** would require the completion of a Storm Water Pollution Prevention Plan (SWPPP), mitigation measure **MM-HYD-1b** would require the City of Long Beach to review and approve the SWPPP, and mitigation measure **MM-HYD-1c** would require all construction activities to comply with the City of Long Beach Stormwater Management Plan. These mitigation measures would assure effective control of not only sediment discharge, but also of pollutants associated with sediments, such as nutrients, heavy metals, and certain pesticides, including legacy pesticides. Additionally, mitigation measure **MM-HYD-2a** requires development of a Standard Urban Stormwater Mitigation Plan (SUSMP) and mitigation measure **MM-HYD-2b** requires the SUSMP to comply with the City of Long Beach Stormwater Management Plan. The SUSMP would result in an increase in pervious surfaces and associated groundwater recharge, such that impacts would be less than significant after mitigation. Impacts are considered less than

significant with the implementation of mitigation measures **MM-HYD-1a** through **MM-HYD-1c** and **MM-HYD-2a** and **MM-HYD-2b**, and as such, impacts are considered **less than significant with mitigation incorporated** under CEQA.

NEPA Impact Determination

Proposed Project-related nonpoint source runoff associated with GCSP construction and operation could potentially exacerbate existing surface water pollution in the already impaired Los Cerritos WMA and Los Angeles River WMA. As such, effects are potentially significant and adverse under NEPA. However, the implementation of mitigation measures **MM-HYD-1a** through **MM-HYD-1c** and **MM-HYD-2a** and **MM-HYD-2b** would reduce these **effects to below a level of significance**, and impacts would **not be adverse**.

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?

The Proposed Project would allow for the intensification and redistribution of land uses with higher-density development, which would result in the extraction of additional groundwater supplies. Based on the City of Long Beach 2015 Urban Water Management Plan (UWMP) (City of Long Beach 2016b), the two primary sources of potable water to the City are groundwater and imported water. In addition, LBWD provides recycled water to an increasing number of customers to replace the use of potable water. Groundwater in the City is extracted from the Central Basin aquifer, which originates from the San Gabriel Mountains via the San Gabriel River.

The Central Basin aquifer was seriously overdrafted by the mid-1900s, which led to adjudication of the basin in Los Angeles County Superior Court in 1965. The adjudication now provides the framework for managing the Central Basin, by apportioning pumping rights to certain parties and strictly limiting extractions to those apportioned rights. However, because the annual pumping rights allocated to the Central Basin Judgement exceeded the natural yield of the basin, the Judgement also charges the Water Replenishment District of Southern California with the responsibility of replenishing the basin. Parties extracting water from the basin pay an assessment to the Water Replenishment District on a per-acre-foot extracted basis; revenue which is used by the district to replenish and protect the basin. The combination of strict extraction limitations and a variety of replenishment activities that have a dependable source of funding have made the Central Basin a reliable water supply, even during multi-year droughts, through the year 2040. For example, recycled water is mixed with imported water and/or natural

runoff and is allowed to percolate in the groundwater basin, and San Gabriel River stream flows are used to replenish the groundwater basins (City of Long Beach 2016).

As noted above, the City maintains reliable water sources from an adjudicated basin. As described in Section 3.13, Utilities and Service Systems, of this Draft PEIR/PEIS, the Proposed Project has been determined to be consistent with water demands in the City's 2015 Urban Water Management Plan (UWMP) and LBWD has identified a surplus water supply to serve the projected demands through 2040. Because the project is consistent with the assumptions of the 2015 UWMP, the buildout of the Proposed Project would not substantially decrease groundwater supplies or impede sustainable groundwater management of the basin more than already considered in the planning documents for water procurement sources.

The redevelopment of existing urban areas could result in increased impervious areas, which affect groundwater recharge. Implementation of mitigation measures **MM-HYD-2a** and **MM-HYD-2b** require a SUSMP, which requires demonstration of how specific projects would minimize impervious surfaces, retain or treat stormwater runoff from the site, and implement designs consistent with the City of Long Beach Low Impact Development (LID) Best Management Practices (BMP) Design Manual. With implementation of LID BMPs and minimization of impervious surfaces, future projects under the GCSP would follow applicable regulations and impacts related to denied groundwater recharge would be reduced to less than significant.

CEQA Impact Determination

Because the City of Long Beach maintains reliable water sources from an adjudicated basin, as described above, the Proposed Project would not substantially decrease groundwater supplies or impede sustainable groundwater management of the basin. However, because the Proposed Project could result in new impervious surfaces, impacts under CEQA related to denied recharge are considered potentially significant. However, with the implementation of mitigation measures **MM-HYD-2a** and **MM-HYD-2b**, impacts would be **less than significant with mitigation incorporated**.

NEPA Impact Determination

Because the City of Long Beach maintains reliable water sources from an adjudicated basin, as described above, the Proposed Project would not substantially decrease groundwater supplies or impede sustainable groundwater management of the basin. However, because the Proposed Project could result in new impervious surfaces, effects related to denied recharge are potentially significant and adverse under NEPA**.** However, the implementation of mitigation measures **MM-HYD-2a** and **MM-HYD-2b** would reduce these **effects to below a level of significance**, and impacts would **not be adverse**.

c) 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:

(i) result in substantial erosion or siltation on- or off-site?

No creeks or major drainages traverse the Plan Area. With the exception of the extreme southwest portion of the Plan Area, where moderate to steep slopes are locally present along the northwester perimeter of Signal Hill, the majority of the Plan Area is relatively flat to gently sloping. Proposed grading and construction of individual projects under the GCSP would result in minor alteration of existing drainage patterns to accommodate each proposed development. However, continued on-site urban development would not substantially alter drainage patterns such that siltation would occur on- or off-site. Potential erosion and off-site siltation of downstream waterways would be temporary and related primarily to grading and construction activities.

While the existing drainage pattern of the site would largely remain flat similar to existing conditions, all on- and off-site impacts related to hydrology would be mitigated through compliance with regulatory requirements. Mitigation measures **MM-HYD-1a** and **MM-HYD-1b** outlines the requirements for preparation of a SWPPP and compliance with the established Best Management Practices (BMPs). Furthermore, mitigation measure **MM-HYD-1c** requires all construction activities to comply with the City of Long Beach, Stormwater Management Plan which include management practices and control techniques. Mitigation measures **MM-HYD-3a** and **MM-HYD-3b** require the completion of a Hydrology/Drainage Report shall be developed during the design of individual projects proposed as part of the GCSP. The Hydrology/Drainage Report shall demonstrate that stormwater runoff flow volume and flow rate, associated with specific projects, would be less than or equal to existing conditions to prevent on- and off-site flooding. Compliance with these mitigation measures on a project-level basis would ensure that potential impacts related to on-site and off-site erosion or siltation remain less than significant.

CEQA Impact Determination

Proposed Project-related erosion-induced siltation of downstream waterways, in association with the construction of future projects under the GCSP, could potentially exacerbate existing surface water pollution in the already impaired Los Cerritos WMA and Los Angeles River WMA. With the implementation of mitigation measures **MM-HYD-1a** through **MM-HYD-1c**, **MM-HYD-3a**, **and MM-HYD-3b**, impacts would be **less than significant with mitigation incorporated** under CEQA. Redevelopment of the area, with mitigation, would facilitate greater on-site retention, treatment, infiltration and appropriate conveyance when compared to the existing conditions baseline.

NEPA Impact Determination

Proposed Project-related erosion-induced siltation of downstream waterways, in association with the construction of future projects under the GCSP, could potentially exacerbate existing surface water pollution in the already impaired Los Cerritos WMA and Los Angeles River WMA. As such, effects are potentially significant and adverse under NEPA. However, the implementation of mitigation measures **MM-HYD-1a** through **MM-HYD-1c**, **MM-HYD-3a**, and **MM-HYD-3b** would reduce these **effects to below a level of significance**, and impacts would **not be adverse**.

(ii) Result in flooding on- or off-site or create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage system;

As discussed above, proposed grading and construction of individual projects under the GCSP would result in minor alteration of existing drainage patterns to accommodate each proposed development. Continued on-site urban development would not substantially alter drainage patterns of the Plan Area. However, Proposed Project development could potentially result in an increase in surface runoff as a result of increased impervious surfaces, in a manner which could result in flooding on- or off-site, or exceed the capacity of existing or planned storm drain systems.

As mentioned in discussions above, all on- and off-site impacts related to flooding would be mitigated through compliance with regulatory requirements. Mitigation measures **MM-HYD-1a** through **MM-HYD-3b** outline the requirements for compliance with all regulations related to hydrology and water quality during construction and operation, including the completion of a hydrology/drainage report. The implementation of LID BMPs and drainage controls would ensure that the amount of on-site impervious surfaces would not result in flooding on- or off-site or exceedance of storm drain systems. Compliance with these mitigation measures on a project-level basis would ensure that potential impacts related to on-site and off-site flooding or exceedance of storm drain capacity remain less than significant.

CEQA Impact Determination

Much of the land within the Plan Area is paved, either as right-of-way, parking lot, or covered by buildings. Regardless, depending on the specific project design, Proposed Project development could potentially result in an increase in surface water runoff in a manner which would result in flooding on- or off-site, or exceed the capacity of existing or planned storm drain systems. With the implementation of mitigation measures **MM-HYD-1a** through **MM-HYD-3b**, impacts would be **less than significant with mitigation incorporated** under CEQA.

NEPA Impact Determination

Much of the land within the Plan Area is paved, either as right-of-way, parking lot, or covered by buildings. Regardless, depending on the specific project design, Proposed Project development could potentially result in an increase in surface runoff in a manner which would result in flooding on- or off-site, or exceed the capacity of existing or planned storm drain systems. As such, effects are potentially significant and adverse under NEPA. However, the implementation of mitigation measures **MM-HYD-1a** through **MM-HYD-3b** would reduce these **effects to below a level of significance**, and impacts would **not be adverse**.

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

As discussed under A (above), Proposed Project grading and construction could result in erosion induced siltation of receiving water bodies, including the Cerritos Channel, Los Angeles River, and downstream Los Angeles/Long Beach Harbor. In addition, during construction, petroleum hydrocarbons in site runoff could result from incidental spills during construction equipment/vehicle fueling or maintenance. During Proposed Project operations, nonpoint source runoff of pollutants such as oil, grease, and metals in parking and vehicle maintenance areas; incidental spills of hazardous materials from industrial facilities; pesticides, herbicides, nitrogen, and phosphorous in landscape areas; and miscellaneous pathogens (bacteria), trash, and debris could occur at the Plan Area.

All on- and off-site impacts related to runoff during construction and operation of future individual projects under the GCSP would be mitigated through compliance with regulatory requirements. Mitigation measures **MM-HYD-1a** through **MM-HYD-3b** outline the requirements for compliance with all regulations related to hydrology and water quality during construction and operation, including the completion of a hydrology/drainage report. The implementation of LID BMPs and drainage controls would ensure that the amount of on-site impervious surfaces would not result in additional sources of polluted runoff. Examples of BMPs to address polluted runoff include, but are not limited to, on-site biofiltration (unlined bioswales and biodetention basins) and vegetation-based stormwater quality control measures. Compliance with these mitigation measures on a project-level basis would ensure that potential impacts related to polluted runoff remain less than significant.

CEQA Impact Determination

Proposed Project-related nonpoint source runoff associated with future construction and operation under the GCSP could potentially exacerbate existing surface water pollution in the already impaired Los Cerritos WMA and Los Angeles River WMA. With the implementation of mitigation measures **MM-HYD-1a** through **MM-HYD-3b**, impacts would be **less than significant with mitigation incorporated** under CEQA.

NEPA Impact Determination

Proposed Project-related nonpoint source runoff associated with future construction and operation under the GCSP could potentially exacerbate existing surface water pollution in the already impaired Los Cerritos WMA and Los Angeles River WMA. As such, effects are potentially significant and adverse under NEPA. However, the implementation of mitigation measures **MM-HYD-1a** through **MM-HYD-3b** would reduce these **effects to below a level of significance**, and impacts would **not be adverse**.

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

Water Quality Control Plan

As previously discussed, to implement the requirements of the 1999 MS4 Permit, the City developed the Long Beach Storm Water Management Program, a comprehensive program of practices and activities aimed at reducing or eliminating storm water pollutants from new development, to the maximum extent practicable. This program includes customized strategies, control measures, BMPs, consistent with the Los Angeles RWQCB Watershed Management Areas. Since 2015, the following watershed management plans have been approved and are currently being implemented: Long Beach Nearshore, Los Cerritos Channel Watershed, Lower Los Angeles River Watershed, and Lower San Gabriel River. Proposed Project-related nonpoint source runoff associated with GCSP construction and operation could potentially exacerbate existing surface water pollution in the already impaired Los Cerritos WMA and Los Angeles River WMA. However, the Proposed Project would not conflict with or obstruct implementation of these watershed management plans.

Sustainable Groundwater Management Plan

With respect to groundwater management, because the City of Long Beach maintains reliable water sources from an adjudicated basin, as described above, the Proposed Project would not conflict with or obstruct a sustainable groundwater management plan.

CEQA Impact Determination

Proposed Project-related nonpoint source runoff associated with future construction and operation under the GCSP could potentially exacerbate existing surface water pollution in the already impaired Los Cerritos WMA and Los Angeles River WMA. However, the Proposed Project would not conflict with or obstruct implementation of the Long Beach Storm Water Management Program and other regional watershed management plans. Impacts are considered **less than significant** under CEQA.

Because the City of Long Beach maintains reliable water sources from an adjudicated basin, the Proposed Project would not conflict with or obstruct a sustainable groundwater management plan. Impacts are considered **less than significant** under CEQA.

NEPA Impact Determination

Proposed Project-related nonpoint source runoff associated with future construction and operation under the GCSP could potentially exacerbate existing surface water pollution in the already impaired Los Cerritos WMA and Los Angeles River WMA. However, the Proposed Project would not conflict with or obstruct implementation of the Long Beach Storm Water Management Program and other regional watershed management plans. As such, effects are not potentially significant and adverse under NEPA

Because the City of Long Beach maintains reliable water sources from an adjudicated basin, the Proposed Project would not conflict with or obstruct a sustainable groundwater management plan. Impacts under NEPA would **not be adverse**.

3.6.5 Cumulative Impacts

Water Quality

The geographic context for the analysis of cumulative impacts associated with water quality is the encompassing Los Cerritos Channel/Alamitos Bay Watershed and the Los Angeles River Watershed. Cumulative development in the watershed could add new sources of stormwater runoff. Construction activities associated with development could temporarily increase the amount of exposed surfaces that could contribute to sediments in stormwater runoff. Additionally, materials associated with construction activities could be deposited on surfaces and carried to receiving waters in stormwater runoff.

Continued development and redevelopment within the Los Cerritos Channel/Alamitos Bay Watershed and the Los Angeles River Watershed could also increase the amount of impervious surfaces that could increase stormwater runoff rates and amounts, as well as changes in land use

that may increase the amount of pollutants in stormwater runoff. However, all cumulative development in the watersheds would be subject to the existing regulatory requirements to protect water quality and minimize increases in stormwater runoff. For example, the Construction General Permit requires development and implementation of a SWPPP for all construction sites larger than one acre to mitigate potential impacts to water quality from polluted stormwater runoff.

Construction sites smaller than one acre would be subject to municipal regulations, such as the MS4 Permit, which requires that the project designer and/or contractor of all new development and redevelopment projects that fall under specific "priority" project categories develop a SUSMP. Development in these municipalities would also be subject to local goals and policies related to water quality, such as the Water Resource Management Goals in the City of Long Beach General Plan, Conservation Element, and the City of Long Beach Sustainable City Action Plan.

Every two years, the Los Angeles RWQCB must re-evaluate water quality within its geographic region and identify those water bodies not meeting water quality standards. For those impaired water bodies, a TMDL must be prepared and implemented to reduce pollutant loads to levels that would not contribute to a violation of water quality standards. All development within the Los Cerritos Channel/Alamitos Bay Watershed and the Los Angeles River Watershed are subject to the water quality standards outlined in the Basin Plan and must comply with any established TMDLs. The continuing review process would ensure that cumulative development within the watershed would not substantially degrade water quality.

The City is subject to requirements of the MS4 Permit. Currently, the City MS4 permit requires that the project designer and/or contractor of all new development and redevelopment projects that fall under specific "priority" project categories must develop a SUSMP, which include LID design requirements related to water quality. In addition, the City would coordinate with other MS4 permittees on the development of an Enhanced Watershed Management Program, which evaluates the multi-benefits of regional projects and implements regional control measures and BMPs. The Watershed Management Program includes an evaluation of existing water quality conditions, identifying water quality priorities within each WMA, selecting watershed control measures, and incorporating compliance schedules. Since 2015, the following watershed management plans have been approved and are currently being implemented: Long Beach Nearshore, Los Cerritos Channel Watershed, Lower Los Angeles River Watershed, and Lower San Gabriel River.

The Proposed Project would require implementation of mitigation measures **MM-HYD-1a** through **MM-HYD1c**, which mandates completion of a SWPPP and associated BMPs during construction, in order to reduce potential erosion induced siltation of off-site water bodies. The Proposed Project would also require implementation of mitigation measures **MM-HYD-2a** and **MM-HYD-2b**, which mandates development of a SUSMP during project design in order to reduce impervious surfaces and increase on-site filtration of contaminants in stormwater runoff. The

SUSMP would address long-term effects on water quality within the Los Cerritos Channel/Alamitos Bay Watershed and the Los Angeles River Watershed and ensure BMPs and LID designs minimize potential water quality concerns to the maximum extent practicable.

Therefore, impacts associated with water quality standards and polluted runoff in the watersheds would be minimized, and with implementation of mitigation measures **MM-HYD-1a** through **MM-HYD-1c, MM-HYD-2a**, and **MM-HYD-2b**, the Proposed Project's contribution to cumulative impacts would **not be cumulatively considerable**.

Stormwater Drainage

The geographic context for the analysis of cumulative impacts related to storm drainage is the Los Cerritos Channel/Alamitos Bay Watershed and the Los Angeles River Watershed. Cumulative development within the watersheds could potentially increase the amount of impervious surfaces that could cause or contribute to storm drain and creek bed capacity exceedance, alter existing creek bed profiles (i.e., create erosive downcutting and bank failure), and/or require construction of new or expanded flood control infrastructure. New development within the watersheds would be subject to the environmental review process and compliance with local stormwater regulations, such as the Construction General Permit, the Section 404 permit process of the CWA, local municipal code requirements, and local Water Quality Management Plan requirements.

The Proposed Project would require implementation of mitigation measures **MM-HYD-2a** and **MM-HYD-2b**, which mandates development of a SUSMP during project design in order to reduce impervious surfaces and reduce stormwater runoff. In addition, the Proposed Project would require implementation of mitigation measures **MM-HYD-3a** and **MM-HYD-3b**, which mandates that a Hydrology/Drainage Report be developed during the design of individual future projects proposed under the GCSP. The Hydrology/Drainage Report would demonstrate that stormwater runoff flow volumes and flow rates, associated with specific projects, would be less than or equal to existing conditions to prevent on- and off-site flooding.

Similar to the Proposed Project, other projects in the Los Cerritos Channel/Alamitos Bay Watershed and the Los Angeles River Watershed would incorporate hydromodification features such that drainage rates and volumes would be less than or equal to existing conditions. Therefore, with the implementation of mitigation measures **MM-HYD-2a**, **MM-HYD-2b**, **MM-HYD-3a**, and **MM-HYD-3b**, impacts associated with changes in runoff in the watershed would be minimized, and the Proposed Project's contribution to cumulative impacts would **not be cumulatively considerable**.

3.6.6 Mitigation Measures

MM-HYD-1a A Storm Water Pollution Prevention Plan (SWPPP) shall be completed for Proposed Project grading in excess of one acre, in accordance with the Statewide Construction General Permit (State Water Resources Control Board Order 2009-0009-DWQ, as amended). In accordance with the SWPPP, the construction contractor shall implement water quality Best Management Practices (BMPs) to ensure that water quality standards are met, and that stormwater runoff from construction work areas do not cause degradation of water quality in receiving water bodies, including the Cerritos Channel, Los Angeles River, and downstream Los Angeles/Long Beach Harbor.

The SWPPP shall include erosion control measures and proper handling of petroleum products, such as proper petroleum product storage and spill response practices, appropriate handling and disposal of small quantities of hazardous materials/wastes, litter control and pick up, and vehicle and equipment repair and maintenance in designated areas.

Typical BMPs that shall be incorporated into the SWPPP (as applicable) include the following:

1. Diverting off-site runoff away from the construction site
2. Vegetating landscaped/vegetated swale areas as soon as feasible following grading activities
3. Placing perimeter straw wattles to prevent off-site transport of sediment
4. Construction of sedimentation basins
5. Limitations on work periods during storm events
6. Protection of stockpiled materials
7. Using drop inlet protection (filters and sand bags or straw wattles), with sandbag check dams within paved areas
8. Regular watering of exposed soils to control dust during demolition and construction
9. Implementing specifications for demolition/construction waste handling and disposal
10. Maintaining erosion and sedimentation control measures throughout the construction period

11. Stabilizing construction entrances to avoid trucks from imprinting soil and debris onto City roadways
12. Training, including for subcontractors, on general site housekeeping
13. Using contained equipment wash-out and vehicle maintenance areas
14. Providing educational materials on oil disposal and recycling programs
15. Implementing spill control at fueling facilities

MM-HYD-1b The SWPPP shall be reviewed and approved by the City of Long Beach for compliance with the Los Angeles County Public Works Construction Site Best Management Practices Manual (LACDPW 2010).

MM-HYD-1c All Proposed Project construction activities are required to comply with the City of Long Beach, Stormwater Management Plan, which requires controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques, and engineering/system methods for the control of such pollutants.

MM-HYD-2a A Standard Urban Stormwater Mitigation Plan (SUSMP) shall be developed during the design of the Proposed Project. The SUSMP shall demonstrate how specific projects would minimize impervious surfaces, retain or treat stormwater runoff from the site, and implement designs consistent with the City of Long Beach *Low Impact Development (LID) Best Management Practices (BMP) Design Manual* (City of Long Beach 2013). The design shall include Source Control and Treatment BMPs and an Operations & Maintenance Plan for the proposed BMPs. The SUSMP shall address long-term effects on water quality within the Los Cerritos Channel/Alamitos Bay Watershed and the Los Angeles River Watershed and ensure BMPs and LID designs minimize potential water quality concerns to the maximum extent practicable.

MM-HYD-2b The SUSMP shall comply with the City of Long Beach, Stormwater Management Plan, which requires controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques, and engineering/system methods for the control of such pollutants.

MM-HYD-3a A Hydrology/Drainage Report shall be developed during the design of individual projects proposed as part of the Globemaster Corridor Specific Plan. The Hydrology/Drainage Report shall demonstrate that stormwater runoff flow volume and flow rate, associated with specific projects, would be less than or equal to existing

conditions to prevent on- and off-site flooding. Project design features that would contribute in reducing stormwater runoff could include:

1. On-site biofiltration (unlined bioswales and biodetention basins)
2. Lined (i.e., impervious) bioswales and detention basins
3. Vegetation-based stormwater quality control measures, including self-treating landscape areas and lined planters
4. Proprietary stormwater quality control measures, which are also known as manufactured treatment devices

MM-HYD-3b The Hydrology/Drainage Report shall comply with the Los Angeles County Department of Public Works Hydrology and Hydraulic Design Manual (LACDPW 2006) for storm drain planning and design calculations.

3.6.7 Significance After Mitigation

The construction-phase BMPs outlined in mitigation measure **MM-HYD-1a** would assure effective control of not only sediment discharge, but also of pollutants associated with sediments, such as nutrients, heavy metals, and certain pesticides, including legacy pesticides, such that impacts are less than significant after mitigation. New construction in accordance with a SUSMP, including LID features such as permeable landscaping, biofiltration basins, and permeable detention basins, as discussed in mitigation measure **MM-HYD-2a**, would result in an increase in pervious surfaces and associated groundwater recharge, such that impacts would be less than significant after mitigation. And new construction in accordance with a project-specific Hydrology/Drainage Report, as discussed in mitigation measures **MM-HYD-3a** and **MM-HYD-3b**, would result in post-construction runoff being less than or equal to existing conditions, such that impacts would be less than significant after mitigation. As such, overall impacts to hydrology and water quality as a result of implementing future projects under the GCSP are considered **less than significant with mitigation incorporated**.

3.6.8 References

City of Long Beach. 2016. *Long Beach Water, 2015 Urban Water Management Plan*. Accessed December 17, 2018. http://www.lbwater.org/sites/default/files/documents/LBWD2015UWMP.pdf.

City of Long Beach. 2013. *Low Impact Development (LID) Best Management Practices (BMP) Design Manual.* Prepared by Long Beach Development Services. Accessed December 17, 2018. http://www.lbds.info/civica/filebank/blobdload.asp?BlobID=3855City of Long Beach. 2019. General Plan. Land Use Element. December 2019. http://www.longbeach.gov/globalassets/lbds/media-library/documents/planning/advance/lueude/land-use-element-final-adopted-december-2019.

LACDPW (Los Angeles County Department of Public Works). 2006. *Hydrology Manual*. Prepared by the Water Resources Division, January 2006. Accessed February 21, 2019. https://dpw.lacounty.gov/wrd/Publication/engineering/2006_Hydrology_Manual/2006%20Hydrology%20Manual-Divided.pdf.

LACDPW (Los Angeles County Department of Public Works). 2010. *Construction Site Best Management Practices (BMPs) Manual*, August 2010.

LARWQCB (Los Angeles Regional Water Quality Control Board). 2018a. "Water Quality and Watersheds". Accessed December 7, 2018. https://www.waterboards.ca.gov/losangeles/water_issues/programs/regional_program/Water_Quality_and_Watersheds/ws_loscerritos.shtml.

LARWQCB (Los Angeles Regional Water Quality Control Board). 2018b. "Watershed Management Programs". Accessed February 18, 2019. https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/.

LARWQCB (Los Angeles Regional Water Quality Control Board). 2014. *Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*. Accessed December 10, 2018. https://www.waterboards.ca.gov/losangeles/water_issues/programs/basin_plan/basin_plan_documentation.html.

3.7 LAND USE AND PLANNING

This section describes the potential conflicts with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the Proposed Project (including, but not limited to the General Plan and Zoning Code) resulting from implementation of the Globemaster Corridor Specific Plan (GCSP; Proposed Project). This section also describes the existing land use and planning setting of the Plan Area, identifies associated regulatory requirements and evaluates potential land use impacts related to implementation of the Proposed Project.

The Initial Study (IS) and Notice of Preparation (NOP) are contained in Appendix A-1, Initial Study; and Appendix A-2, Notice of Preparation, respectively. Comments regarding land use and planning, received in response to the NOP (see Appendix A-3, Notice of Preparation Comment Letters), specifically related to increasing pedestrian connections, improving walkways, and adding more parkland or public spaces, and have been considered in the preparation of the analyses presented in this section.

The IS found that the Proposed Project would have a less than significant impact as it relates to physically dividing an established community, and conflicting with an applicable habitat conservation plan (Appendix A-1). As such, these impacts will not be addressed further in this Draft Program Environmental Impact Report (PEIR)/Draft Program Environmental Impact Statement (PEIS).

In addition to the GCSP, the following references were used in the preparation of this section of the PEIR/PEIS:

- General Plan Land Use and Urban Design Elements Project EIR, City of Long Beach
- City of Long Beach General Plan Land Use Element (1989)[1]
- City of Long Beach Scenic Routes Element (1975)[1]
- City of Long Beach General Plan
    - Land Use Element (2019)
    - Historic Preservation Element (2010)
    - Air Quality Element (1996)
    - Mobility Element (2013)

[1] The City's General Plan Land Use Element (1989) and Scenic Routes Element (1975) were updated in 2019. The Scenic Routes Element was replaced with the Urban Design Element. At time the Notice of Preparation (NOP) for this PEIR/PEIS was published and circulated for review (September 12, 2018), the 1989 General Plan Land Use Element and Scenic Routes Element were in effect. Subsequent to the NOP, the 2019 General Plan Land Use Element and Scenic Routes Element were approved by City Council on December 3, 2019.

  - Open Space and Recreation Element (2002)
  - Housing Element (2014)
  - Seismic Safety Element (1988)
  - Noise Element (1975)
  - Public Safety Element (1975)
  - Urban Design Element (2019)
- 2016 Regional Transportation Plan and Sustainable Communities Strategy, Southern California Association of Governments
- City of Long Beach Bicycle Master Plan (2017)
- Los Angeles County Airport Land Use Plan
- Caltrans California Airport Land Use Planning Handbook (2011)

While the NOP was released for public review while the 2019 Land Use Element was pending approval. Both the 1989 Land Use Element and the 2019 Land Use Element have been reviewed for consistency.

3.7.1 Existing Conditions

The Plan Area and surrounding area is characterized as an urban, developed commercial, industrial, and residential area. The most prominent land use adjacent to the Plan Area is the Long Beach Airport to the north, east, and south. The Plan Area and all surrounding properties have undergone disturbance previously resulting from development of the commercial, industrial, and residential uses that surround it.

The Plan Area consists of a variety of low- to mid-rise commercial and industrial uses. Land uses are supported by a streetscape context largely auto-oriented in nature, and lacking in street trees and other pedestrian amenities that would encourage walking through the Plan Area. Figure 2-3, Existing Land Uses in Chapter 2.0, Project Description, illustrates the pattern of existing land uses as of 2017.

Northern Area - Auto-Oriented Commercial

The Northern Area is occupied by single-story auto-oriented commercial uses, including auto-service shops, car dealerships, and strip commercial centers. The Long Beach Town Square shopping center is the largest shopping center in the area.

Central Core Area – Industrial

The Central Core Area is home to primarily industrial uses, including the former Boeing C-17 Site comprised of approximately 1.1 million square feet (approximately 25 acres) of enclosed aerospace manufacturing production space and associated buildings. To the east of these buildings are airport-owned property used for airport-related uses and taxiing planes to the runways. Along Cherry Avenue in the central core are industrial uses and auto-oriented commercial establishments such as fast-food restaurants; car wash, rentals and sales; and a gas station.

Southern Area – Commercial/Industrial

The Southern Area includes primarily large-scale industrial operations and warehouses west of Cherry Avenue. East of Cherry Avenue uses transition to more commercial/office related businesses, including a new multi-story office building, motorcycle dealership, and a new retail center under construction at the Cherry Avenue/Spring Street intersection.

Southeastern Area – Industrial

The Southeastern Area includes primarily large scale industrial operations and warehouses west of Cherry Avenue. East of Cherry Avenue, uses transition to more commercial/office related businesses, including a new multistory office building, motorcycle dealership and a new retail center.

Adjacent Land Use Designations and Zoning

The Plan Area is surrounded almost entirely by development, consisting of residential, industrial, and commercial land uses, including the Long Beach Airport. The City of Signal Hill and the City of Lakewood are located immediately adjacent to the Plan Area. Specific land uses surrounding the Plan Area are detailed below:

North: The Plan Area extends north along Cherry Avenue and past Carson Street. The land use to the northwest of the Plan Area consists of single-family residential uses. A self-storage facility and the All Souls Cemetery are directly north of the Plan Area. The Long Beach Airport also extends north of the Central Core of the Plan Area.

South: Industrial and commercial land uses within the City of Signal Hill are located directly south of the Plan Area. Additionally, an open space area associated with Willow Springs Park is located south of the Plan Area. The Long Beach Airport also extends south of the Plan Area.

East: The majority of the eastern boundary of the Plan Area is adjacent to the Long Beach Airport. The City of Lakewood is adjacent to the Plan Area to the northeast. Land uses in this part of

the City of Lakewood include industrial properties, as well as a small amount of medium-density to high-density residential and low-density residential uses. The I-405 freeway passes through the Plan Area

West: The majority of the land located west of the Plan Area consists of single-family residential uses. The neighborhood adjacent to the Plan Area is California Heights, which is within the Bixby Knolls Community Plan Area. California Heights is a locally-designated historic district where Spanish Colonial style homes were built in the 1920s and 1930s, coinciding with the discovery of oil at Signal Hill. The City of Signal Hill borders the southwestern portion of the Plan Area and includes commercial and industrial land uses, as well as a small amount of low-density to medium-density residential uses, Reservoir Park (a small open space area associated with Gundry Reservoir), and Burroughs Elementary School. Additionally, the I-405 freeway passes through the Plan Area and continues west of the Plan Area.

Proposed Project

The Proposed Project involves the implementation of the GCSP, which serves as a planning and regulatory framework for the Plan Area. The GCSP would guide land uses for the approximately 437-acre Plan Area and allow development within this Plan Area as defined in the GCSP (Figure 2-6, Globemaster Corridor Specific Plan, of Chapter 2.0, Project Description).

Globemaster Corridor Specific Plan

The GCSP creates a policy framework for the development and improvement of the Plan Area into an employment district in an area adjacent to the Long Beach Airport, I-405 freeway, and surrounding residential and business community. Key components of the GCSP include:

- **Summary.** This chapter provides a brief background and overview of the GCSP, and serves as a quick reference and summary of each chapter contained in the GCSP.
- **Context.** This chapter describes the location, history, and existing conditions of the Plan Area, along with a summary of community workshop meetings.
- **Vision and Goals.** This chapter describes the vision for the overall plan, as well as the goals and policies.

- **Land Use and Mobility.** This chapter describes recommended land use and transportation improvements to the Plan Area and its vicinity. It includes a street network plan and associated cross sections, and identifies bicycle and pedestrian facilities, and nearby transit. The chapter also describes the application of six development districts and two overlay zones proposed as part of the GCSP:
    - **Business Park (BP)** district is intended as a campus-style district that supports a range of employment uses, including professional office, research and development, light industrial, high cube warehousing and aviation-related uses. Warehousing uses shall be high-turnover and employment-generating warehousing subject to the authority of the Zoning Administrator to determine what constitutes a "high-turnover and employment-generating warehouse." Development regulations are designed to achieve high-quality mid-rise structures served by a system of pedestrian pathways, passive and active open space areas, and amenities in a campus-style environment.
    - **Community Commercial (CC)** district supports medium-scale retail, hotel, and service uses intended to serve the entire community, including convenience and comparison shopping goods and associated services. Development regulations are designed to achieve a pedestrian-friendly environment where buildings face the sidewalk at the immediate intersections, and where mid-corridor streetscape enhancements provide a more inviting walking environment.
    - **Industrial Commercial (IC)** district supports a mix of auto-oriented commercial and light industrial uses, including research and development, flex space, warehousing, and small-scale incubator industries, as well as community-serving commercial uses. Land uses are designed to operate entirely within enclosed structures, which pose limited potential for environmental impacts on neighboring uses with respect to noise, hazardous materials, odors, dust, light, glare, traffic, air emissions, and hours of operation. It is anticipated that buildings housing these uses will be within low-scale, adaptively reused structures or part of modern industrial complexes in campus-like settings. Development regulations are designed to address the streetscape to achieve a more inviting walking environment.
    - **General Industrial (IG)** is preserved for traditionally heavy industrial and manufacturing uses such as large construction yards with heavy equipment, chemical manufacturing plants, and food processing plants. The buildings that house these operations may be older industrial buildings retrofitted to accommodate the use or new state-of-the-art manufacturing plants. The focus of the IG district is on the operating characteristics of the use, rather than the particular product created. Development regulations are designed to provide adequate parking and address the streetscape to achieve a more inviting walking environment.

- **Airport (AP)** district is reserved for property that is part of the designated airfield of the Long Beach Airport, and adjacent properties under Airport control. The Federal Aviation Administration (FAA) requires these areas to remain available for aviation operations and aviation-related uses. The property in the Airport district is managed by the Airport Department of the City of Long Beach. Land use and development standards reflect this aviation focus and are intended to accommodate any aviation-related uses approved by the Airport Department.

  This district in the GCSP is created to unify the land use regulations for the western and southern areas of the Long Beach Airport and is intended to serve as a model for the future adoption of an airport zoning district into Title 21 (Zoning Regulations), Long Beach Municipal Code (LBMC), or adoption of a specific plan for the airport, either of which will cover the entire extent of the Long Beach Airport. At the time of the creation of the GCSP Plan, land use at the Long Beach Airport was regulated through a mix of the IG (General Industrial) zoning district, and several Planned Development (PD) Districts, including PDs for the Long Beach Airport Terminal (PD-12), the Atlantic Aviation Center (PD-13), and Douglas Aircraft (PD-19). the GCSP replaces the western area of PD-19 (leaving the eastern area, which is east of Lakewood Boulevard, as-is) and absorbs all of PD-13, as well as the IG zone on the airport property within the extent of the Plan Area.
- **Open Space** district is established to preserve the designated open space area at the southeast corner of Spring Street and California Avenue within the Plan Area. This district is intended to be used for active and passive public use, including for recreational, cultural, and community service activities that provide physical and psychological relief from the intense urban development of the Plan Area.
- **Cherry Avenue Overlay Zone** is intended to allow complementary retail and restaurant amenities supportive of the underlying BP district and adjacent neighborhoods. Development standards are designed to ensure that new uses are pedestrian-oriented and address Cherry Avenue either as stand-alone buildings or integrated with new business-park or modern industrial complexes in a campus-style setting.
- **Airport Environs Overlay Zone (AEOZ)** encompasses the entire Specific Plan area. It is intended to ensure that future land uses within the plan area are compatible with airport operations with respect to noise, safety and airspace protection. The AEOZ includes the areas within: 1) the airport's 65 and 70 decibels (dB) Community Noise Equivalent Level (CNEL) contours; 2) the six safety compatibility zones applicable to each airport runway where heightened risk levels may warrant restrictions on land use development; and 3) the airspace protection surfaces that define the airport's airspace, including FAA Part 77 and TERPS surfaces. Each of these areas are mapped and addressed in detail in Section 2.3.2, Airport Compatibility, and again in Section 5.5, Development Regulations. The

information pertaining to this Overlay Zone is informational only. Final authority and land use jurisdiction rests with the City, with the Federal Aviation Administration (FAA) serving as an advisory body with respect to land use and height. The City however intends to comply with all FAA airport land use planning guidelines in this plan, as well as Caltrans and County guidelines and regulations.

- **Land Use and Development Regulations.** This chapter provides development standards (building height, community benefits, setbacks, open space, parking, and adaptive reuse) and permitted uses within each development district and overlay zone.
- **Urban Design Guidelines.** This chapter describes the building design standards (massing, articulation, materials, openings, landscape, screening, signage, etc.).
- **Infrastructure Systems.** This chapter discusses the proposed distribution, location, and extent of the utility's infrastructure (water, wastewater, stormwater, gas, and electric), and other essential facilities proposed to be located within the Plan Area.
- **Implementation and Administration.** This chapter discusses the general administration, review and approval process, actions for implementation of the GCSP, and a description of strategies for funding these improvements. The GCSP is the regulatory document guiding land use and development within the boundaries identified in the GCSP. Upon adoption by ordinance, the GCSP will serve as the zoning document for the properties within the Plan Area.

3.7.2 Regulatory Setting

Federal

There are no federal plans, policies, or ordinances applicable to the land use considerations of the Proposed Project.

State

California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires that project proponents assess potential land use impacts, including project consistency with local land use policies and plans. Consistency with local land use policies and plans is one of several criteria that can be used to assess whether a project could have significant environmental impacts under the provisions of CEQA. A discussion of local land use policies and plans and standards of significance for potential land use impacts are described below.

California Government Code Section 65300

California Government Code Section 65300 et seq. mandates that every city and county must prepare, adopt and implement a general plan to guide and shape its physical as well as social and economic development, environmental resources, and to address various growth-related statutes of the State over a long-term (typically 20-year) timeframe. This law discusses the substantive and procedural requirements of general plans and places general plans atop the hierarchy of the tools of local government that regulate land use. This law also provides for changes in community development by allowing amendments to be made to a general plan.

California Government Code Section 65450

California Government Code Section 65450 et seq. authorizes cities to prepare, adopt, and administer Specific Plans for portions of their jurisdictions, as a means of implementing the City's General Plan. All Specific Plans must comply with Sections 65450–65457 of the Government Code. The proposed Specific Plan complies with all requirements mandated by state law.

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is a regional council consisting of the following six counties: Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. In total, the SCAG region encompasses 191 cities and over 38,000 square miles within Southern California. SCAG is the Metropolitan Planning Organization (MPO) serving the region under federal law, and serves as the Joint Powers Authority, the Regional Transportation Planning Agency, and the Council of Governments under State law.

On April 7, 2016, the Southern California Association of Governments' Regional Council adopted the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS). The 2016 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The 2016 RTP/SCS charts a course for closely integrating land use and transportation so that the region can grow smartly and sustainably. It outlines more than $556.5 billion in transportation system investments through 2040. The 2016 RTP/SCS integrates planning for how land is used with planning for how people get around to achieve a thoughtfully planned, maturing region where people benefit from increased mobility, more active lifestyles, increased economic opportunity, and an overall higher quality of life.

Local

City of Long Beach General Plan

The State of California requires cities and counties to prepare and adopt a general plan to set out a long-range vision and comprehensive policy framework for its future. The state also mandates that the plan be updated periodically to ensure relevance and utility. The *City of Long Beach General Plan* includes 11 elements that were adopted between 1975 and 2019. The City recently completed the process of updating the Land Use and Urban Design Elements. The Land Use and Urban Design Elements were adopted by City Council in December 2019, which was after the circulation of the NOP for the Globemaster Corridor Specific Plan PEIR/PEIS in September 2018; therefore, both the former Land Use Element (1989)/Scenic Routes Element (1975) and 2019 Land Use and Urban Design Elements are assessed here. The following elements contain a land use component and are addressed for consistency in this General Plan.

Land Use Element (1989)

The 1989 Land Use Element established land use designations and distinct neighborhoods with the City. Goals and objectives were established in this element that to address a range of topics, which include, economic development, downtown revitalization, new housing construction, affordable housing, neighborhood emphasis, facilities maintenance, and functional transportation.

Land Use Element (2019)

In 2019 the City prepared a PEIR for the Land Use and Urban Design Elements. The Land Use Element introduces the concept of "Place Types," which replaces the previous approach of segregating property within the City through traditional land use designations and zoning classifications. The Land Use Element establishes 14 primary Place Types that would divide the City into distinct neighborhoods, thus allowing for greater flexibility and a mix of compatible land uses within these areas. Each Place Type is defined by unique land use, form, and character-defining goals, polices, and implementation strategies tailored specifically to the particular application of that Place Type within the City (City of Long Beach 2019a).

Urban Design Element (2019)

The Urban Design Element is a new element of the City's General Plan that was adopted with approval of the PEIR for the City's Land Use and Urban Design Elements in December 2019. The Urban Design Element defines the physical aspects of the urban environment. Specifically, it aims to further enhance the City's Place Types established in the Land Use Element by creating great places; improving the urban fabric, and public spaces; and defining edges, thoroughfares, and

corridors. The adoption of the 2019 Urban Design Element repealed the 1975 Scenic Routes Element (City of Long Beach 2019b).

Historic Preservation Element (2010)

The Historic Preservation Element outlines a vision for future historic preservation efforts and the actions that need to be taken to achieve it. Development of the Historic Preservation Element was coordinated with the City's 2030 General Plan update. Primary goals of the Historic Preservation Element are to better integrate historic preservation into City procedures and interdepartmental decisions, and to create a meaningful partnership with the community in order to implement the historic preservation program.

Open Space and Recreation Element (2002)

The Open Space and Recreation Element outlines the long-term development and maintenance of park and recreation facilities in the City. Primary goals of the Historic Preservation Element are to support the preservation of natural habitats, improve access to natural environments where appropriate, and remediate contaminated sites.

Mobility Element (2013)

The Mobility Element presents the City's future plan for improving the way people, goods, and resources move from place to place. Primary goals focus on improving the quality of life and natural environment; expanding opportunity, choice, and convenience; and balancing the needs of all users of the transportation network, while providing safe and convenient travel options that are suitable for the urban and suburban context of the City's neighborhoods and districts.

Scenic Routes Element (1975)

The Scenic Routes Element addresses the aesthetics and physical design of the city. It establishes the design criteria for developing a scenic route system and the design standards for the protection of scenic corridors with respect to structures, signing, utility lines, landscaping, view corridors and street furniture. The element culminates with the Conceptual Plan of Scenic Routes and an action plan for their official local designation. The adoption of the 2019 Urban Design Element repealed the 1975 Scenic Routes Element.

Air Quality Element (1996)

The Air Quality Element identifies a series of policies, programs, and strategies that encourage fewer vehicle trips, increased opportunities for alternative transportation modes and fuels, and land use patterns that can be efficiently served by a diversified transportation system. The purpose of

the Air Quality Element is to promote healthful air for all residents of Long Beach and strives to maximize the use of tools available to local governments to promote clean air.

City of Long Beach Zoning Regulations

The Zoning Regulations, Title 21 of the LBMC, includes regulations concerning where and under what conditions various land uses may occur in the City. It also establishes zone-specific height limits, setback requirements, parking ratios, and other development standards, for residential, commercial, industrial, and all other types of sites. The Zoning Ordinance is a primary tool for implementing the City's General Plan. It is the intent of the City that the General Plan LUE and the Zoning Ordinance are consistent to ensure that goals and policies outlined in the General Plan and development standards outlined in the Zoning Ordinance are implemented in a manner that is identifiable with the City's overall vision for the City.

City of Long Beach Bicycle Master Plan (2017)

The City of Long Beach Bicycle Master Plan outlines a vision that increases to increase the proportion of trips made my bicycle to increase by 10% each decade until 2040. The Bicycle Master Plan includes the provision of 200 miles of new bikeways. The Bicycle Master Plan also includes polices to eliminate traffic related facilities by 2026 ("Vision Zero").

Los Angeles County Airport Land Use Plan (1991)

The Los Angeles County Airport Land Use Plan (ALUP) sets forth land use measures that limit the public's exposure to airport related hazards and to minimize nearby uses that may interfere with airport operations. The ALUP defines the runway protection zone, airport property, and the ALUP noise contour; which together define the planning boundaries and airport influence area. The ALUP is prepared in conformance with Federal Aviation Administration (FAA) guidelines. The planning boundaries and policy suggestions contained in the ALUP are then incorporated into the Long Beach General Plan and GCSP as applicable (Los Angeles County 2004), which is administered by the City of Long Beach. Within the ALUP planning boundaries, certain proposed local land use actions must be submitted to the Airport Land Use Commission (ALUC) for review.

3.7.3 Thresholds of Significance

The significance criteria used to evaluate the Proposed Project's impacts to land use and planning are based on Appendix G of the State CEQA Guidelines. According to Appendix G of the State CEQA Guidelines, a significant impact related to land use and planning would occur if the project would:

A. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan,

local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

As stated in the introduction to this section, the IS found that the Proposed Project would have a less than significant impact as it relates to physically dividing an established community, and conflicting with an applicable habitat conservation plan (Appendix A-1, Initial Study). As such, these impacts are not addressed further below.

3.7.4 Impacts Analysis

a) Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

General Plan Consistency

The GCSP land uses designations are consistent with the Land Use Element of the City of Long Beach General Plan. Table 3.7-1 (see Appendix C, Land Use Consistency Table) provides a consistency analysis for the proposed GCSP and the City's applicable General Plan elements, including the PlaceTypes and policies contained in the 2019 Land Use Element. Other General Plan elements evaluated for consistency include the 1989 Land Use Element, the 2019 Urban Design Element, the 2010 Historic Preservation Element, the 2002 Open Space and Recreation Element, the 2013 Mobility Element, the 1975 Scenic Routes Element, and the 1996 Air Quality Element. All other General Plan elements (i.e., Housing, Noise, Seismic Safety, and Public Safety) do not have an applicable land use component, and are therefore, not analyzed for consistency. As shown in Table 3.7-1, the GCSP would be consistent with all applicable goals and policies included in the City's General Plan.

Zoning Ordinance Consistency

The Zoning Regulations (Title 21 of the LBMC), in conformance with the General Plan, regulate land use development in the City. In each zoning district, the zoning regulations specify the permitted and prohibited uses, and the development standards, including setbacks, height, parking, and design standards, among others.

When a specific plan is adopted, the specific plan may effectively supersede portions or all of the current zoning regulations for specified parcels or plan area, and becomes an independent set of zoning regulations that provide specific direction to the type and intensity of uses permitted, and may define other types of design and permitting criteria. The GCSP is adopted by ordinance and serves as the primary zoning document for the Plan Area. Where the GCSP is silent, the relevant sections and requirements of the zoning

regulations shall apply. All required Zoning Regulations related to specific procedures, such as required findings for entitlements, remain in effect with adoption of the GCSP.

Decision-Making Authority

The responsibilities of the Director of Development Services shall include administering, interpreting, and enforcing all requirements and standards of the GCSP, including the acceptance and processing of all land use permit applications. The Director of Development Services or designated representative may approve or deny ministerial applications that meet the requirements of this GCSP and do not require a conditional use permit. The Director of Development Services holds final approval authority for and enforcement of building permits, certificates of occupancy, sign permits, and temporary use permits.

The Zoning Administrator shall have the authority to consider and act on requests for waivers and variances. The Zoning Administrator, or Planning Commission on appeal, may waive setback requirements for additions and new construction, with the exception of minimum required setbacks for corner cut-off areas, if such deviation would be consistent with the intent of this GSCP. For all other requirements and standards of the GCSP, the Zoning Administrator may approve or deny a request for a variance, or refer the application to the Planning Commission in accordance with Chapter 21.25 of the LBMC. The Zoning Administrator's actions may be appealed to the Planning Commission.

The Site Plan Review (SPR) Committee's primary function is as the architectural/design review board for new development. The SPR Committee shall have the authority to consider alternative configurations and compliances with certain development standards in this GCSP, as noted throughout the GSCP, provided that these alternatives meet the fundamental intent of the GSCP and further its goals.

The Planning Commission may approve, conditionally approve, or deny conditional use permits, applications for waivers and variances, specific plan amendments, and appeals of the actions of the Zoning Administrator or SPR Committee to the City Council. The City Council may approve, conditionally approve, or deny conditional use permits, applications for variances, specific plan amendments, and appeals of the actions of the Planning Commission or SPR Committee.

For all specific procedures not modified or otherwise specified within the GCSP, all planning entitlement and permitting processes for projects requiring said permits within the Plan Area shall be carried out in accordance with the procedures in Chapter 21.25 of the LBMC. The GCSP establishes alternate thresholds for SPR, superseding the thresholds in Chapter 21.25 of the LBMC, as follows:

A. Nonresidential Development: 1,000 square feet or more of new building area.

B. Street-Fronting Building Elevation Remodel: Any remodel to a street-fronting building elevation consisting of 25% or more of the elevation. The 25% is counted cumulatively over the entire building frontage and need not be contiguous.

C. Thresholds for requiring Conceptual Site Plan Review and Site Plan Review approval by Planning Commission include projects of 50,000 square feet or more of new building area.

2016-2040 SCAG RTP/SCS Consistency

The 2016 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The 2016 RTP/SCS charts a course for closely integrating land use and transportation so that the region can grow smartly and sustainably. The 2016 RTP/SCS includes a set of goals that are intended to help guide transportation and land use decisions, as well as, public investment. A consistency analysis with the nine goals identified in the 2016 RTP/SCS is provided in Table 3.7-2. As shown in Table 3.7-2, the GCSP is consistent with the 2016 RTP/SCS in that it also embodies the vision of integrating planning for how land is used with planning for transportation. The GCSP combines the land use and mobility plan into one diagram that considers land use districts together with the types of multi-modal roads that will support and be supportive by, the adjoining land uses.

As noted in Chapter 2.0, Project Description, a 2018 market study indicated that warehouse and distribution uses were identified as the highest demand industrial sector over at least the next ten years. The job projections in Table 4, Job Growth Projections, 2018-2045 and Beyond, in the Project Description for the first ten years are essentially consistent with the 2018 market study (mid-point between high and low projections). As of 2020, there are an estimated 3,700 existing jobs in the Plan Area. Ultimately, more than 1,200 of these jobs are planned to be replaced by new development and new jobs. During the 2020-2040 period, it is projected that more than 700 of these would be replaced, leaving about 3,000 existing jobs on site in 2040. Combined with the growth, the total job count in the Plan Area in 2040 is estimated to be 7,880. For comparison, SCAG projects the City of Long Beach as a whole to add 15,900 jobs during this period. Accounting for the loss of some existing jobs, the Plan Area would account for about one third of total citywide net job growth. Thus, the Proposed Project would not exceed the overall projection for jobs in the City of Long Beach in the 2040 horizon year.

City of Long Beach Bike Master Plan Consistency

The City of Long Beach Bicycle Master Plan outlines a vision that increases to increase the proportion of trips made my bicycle to increase by 10% each decade until 2040. The Bicycle Master Plan includes the provision of 200 miles of new bikeways. The Bicycle Master Plan also includes polices to eliminate traffic related facilities by 2026 ("Vision Zero"). The local bicycle facilities within and in close proximity to the Plan Area are located along Spring Street, Bixby Road, Carson Street, Orange Avenue, and Cover Street.

The Bicycle Master Plan guides the development and maintenance of bicycle-friendly roads, bikeways, support facilities, and programs for the City. This policy document aims to reduce traffic congestion by providing better facilities for biking and enhancing alternatives to commuting by car. The City's commitment to being the nation's most bicycle-friendly city relies on implementation and integration of all of the City's mobility- and transit-related plans.

The GCSP provides guidelines for reconfiguring existing streets and installing new streets, both of which to include bike paths consistent with Complete Streets principles, as well as, new bike facilities would be designed in accordance with the Bicycle Master Plan. Improvements to existing streets and the design of new streets are important aspects of this plan. Bicycle facilities are proposed for Cherry Avenue, Wardlow Road, and all new streets in the Plan Area to help improve connectivity within the Plan Area and connect to existing bicycle infrastructure within the vicinity of the Plan Area, strengthening Long Beach's commitment to being the nation's most bicycle-friendly city. A consistency analysis with applicable goals and strategies identified in the City's Bicycle Master Plan is provided in Table 3.7-3. As shown in Table 3.7-3, integration of multi-modal streets that enhance mobility for bicycles, as proposed in the GCSP would be consistent with and would help to implement the City's Bicycle Master Plan.

Long Beach Airport Land Use Compatibility

During the SPR process, the applicant must complete and submit all required forms (including Form 7460-1) to the Federal Aviation Administration (FAA) for a determination of no hazard to air navigation. Prior to issuance of a building permit, a copy of all written findings from the FAA regarding compliance with Part 77, height limit regulations related to the Long Beach Airport, shall be provided to the SPR Committee.

Airspace Protection

The GCSP establishes airspace protection criteria and strategies to avoid development that, by posing hazards or obstructions to flight, could increase the risk of an accident occurring

or result in a loss in airport utility at Long Beach Airport. The hazards of concern are: (i) airspace obstructions; (ii) wildlife hazards, particularly bird strikes; and (iii) land use characteristics that pose other potential hazards to flight by creating visual or electronic interference with air navigation.

The measurement requirements for airspace protection around Long Beach Airport is a function of the dimensions and layout of the runway system and instrument approach procedures; the type of operating procedures established for the Airport; and the performance capabilities of aircraft that operate at the Airport.

Part 77 Airspace Surfaces

To help ensure protection of the airspace essential to the safe operation of aircraft at and around airports, the FAA has established a process that requires project sponsors to inform the FAA about proposed construction that could affect navigable airspace. The standards by which the FAA conducts these aeronautical studies are set forth in Part 77 of the Federal Avigation Regulations (FAR), Objects Affecting Navigable Airspace. FAR Part 77 provides standards for: (i) FAA notification about any proposed construction or alteration of objects (whether permanent, temporary, or of natural growth) that could be a hazard to flight; (ii) imaginary surfaces defining an airport's airspace; and (iii) aeronautical studies determining obstructions to navigable airspace and the potential hazardous effects of such obstruction on the safe and efficient use of that airspace.

Height restrictions range from a maximum of 36 feet in areas closest to the airport, to a maximum of 176 feet towards the outer boundaries of the Plan Area.. The boundaries of the airspace protection surfaces are defined in terms of the Part 77 imaginary surfaces in the airspace extending out from and around the Airport runways.

Standard for Terminal Instrument Procedures (TERPS)

A second set of airspace surfaces around airports are defined by the U.S. Standard for Terminal Instrument Procedures (TERPS). These criteria are used in the design of instrument approach procedures. Specifically, TERPS establishes clearance requirements for all en-route and terminal (airport) instrument procedures including approach, landing, missed approach, and departure. In most cases, height limitations under TERPS are less restrictive than under FAR Part 77. However, because the TERPS surface elevations are directly determined by the location and elevation of critical obstacles, by design, neither the ground nor ay obstacles can penetrate the TERPS surface. Therefore, TERPS surfaces need to be considered in order to fully protect an airport's airspace.

Figure 3.7-1, Standard for Terminal Instrument Procedures (TERPS) Surfaces, provides a diagram of the TERPS surfaces utilizing what is known as "required obstacle

clearance (ROC) bands" for all flight segments of the instrument procedure at Long Beach Airport. Placing the bottom surface of the ROC band on top of the highest obstacle within a segment yields the minimum altitude for that segment. A penetration of a TERPS clearance surface is considered a hazard to flight and should be avoided.

Other Federal Airspace Protection Guidance

Additional guidelines regarding protection of airport airspace are set forth in other FAA documents. In general, the GCSP follows these criteria to specify that no use of land or water anywhere within the boundaries encompassed by FAR Part 77 or TERPS surfaces should be allowed if it could endanger or interfere with landing, take off, or maneuvering of an aircraft at Long Beach Airport. Specific characteristics to be avoided include:

- Creation of electrical interference with navigational signals or radio communication between the airport and aircraft;
- Lighting which is difficult to distinguish from airport lighting;
- Glare in the eyes of pilots using the airport;
- Smoke or other impairments to visibility in the airport vicinity; and
- Uses which attract birds and create bird strike hazards.

Compatibility Strategies and Criteria

The GCSP provides the following compatibility strategies and criteria for airspace protection:

(i) *FAA Notification:*

Proponents of a project involving objects that may exceed a Part 77 surface must notify the FAA as required by FAR Part 77.

(ii) *Building Height Restriction Criteria:*

The City will use the data and findings of an Aeronautical Study, conducted by the FAA pursuant to FAR Part 77, in order to determine if a structure poses hazards to flight or has an adverse effect on the Airport or on aeronautical operations.

The City will not approve any structure within the Plan Area:

(a) If the structure is determined to be a "hazard" by the FAA; or

(b) If the structure is determined to be an "obstruction" by the FAA (including buildings, antennas, and other types of structures and trees) and would:

(1) Raise the ceiling or visibility minimums at the Airport for an existing or planned instrument procedure (i.e., a procedure consistent with the FAA approved airport layout plan or a proposed procedure formally on file with the FAA);

(2) Result in a loss in airport utility, (e.g., in a diminution of the established operational efficiency and capacity of the Airport, such as by causing the usable length of the runway to be reduced); or

(3) Conflict with the visual flight rules (VFR) airspace used for the airport traffic pattern or en-route navigation to and from the Airport.

(iii) *Other Flight Hazards:*

Land uses that may cause visual, electronic, or increased bird strike hazards to aircraft in flight will be consistent with the Globemaster Plan policies and criteria only if the uses are consistent with FAA rules and regulations.

Specific characteristics to be avoided within the Globemaster Plan area that fall within the Part 77 and TERPS surfaces include:

(a) Sources of glare (such as from mirrored or other highly reflective buildings or building features) or bright lights (including search lights and laser light displays);

(b) Distracting lights that could be mistaken for airport lights;

(c) Sources of dust, steam, or smoke that may impair pilot visibility;

(d) Sources of electrical interference with aircraft communications or navigation; and

(e) Any proposed use that creates an increased attraction for large flocks of birds and that is inconsistent with FAA rules and regulations. Certain types of landscaping materials and designs may create wildlife hazard attractants on and near Long Beach Airport.

Conclusion

CEQA Impact Determination

Based on the analysis provided above, the proposed GCSP would be consistent with the City's General Plan, Zoning Ordinance, 2016 SCAG RTP/SCS, the City's Bicycle Master Plan, and

the Long Beach Airport Land Use Compatibility Plan. The proposed GCSP would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental impact, and impacts under CEQA would be **less than significant**. No mitigation is required.

NEPA Impact Determination

Based on the analysis provided above, the proposed GCSP would be consistent with the City's General Plan, Zoning Ordinance, 2016 SCAG RTP/SCS, the City's Bicycle Master Plan, and the Long Beach Airport Land Use Compatibility Plan. The proposed GCSP would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect, and there would be **no adverse impact** under NEPA.

3.7.5 Cumulative Impacts

As defined in the State CEQA Guidelines, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for land use. The cumulative study area used to assess potential cumulative land use impacts include the areas and land uses surrounding the Plan Area.

Continued development in Long Beach, including that which might occur as a result of the GCSP, and the surrounding region could result in increased urbanization, including the density of residential, commercial, office, recreational, and public uses. Under cumulative conditions, conflicts between land uses may occur. Generally, land use conflicts would be related to noise, traffic, air quality, and hazards/human health and safety issues, which are discussed in the relevant sections of the Draft PEIR/PEIS. Land use conflicts are also typically site-specific and not cumulative in nature; in other words, despite the number of cumulative projects in a given area, they wouldn't necessarily compound to create cumulative land use conflicts. Cumulative incompatibility issues associated with surrounding developments or projects are anticipated to be addressed and mitigated for on a project-by-project basis. In addition, the cumulative environmental effects associated with implementation of the GCSP have been addressed in the technical sections of this Draft PEIR/PEIS. This impact would **not be cumulatively considerable**.

3.7.6 Mitigation Measures

Potential impacts associated with land use conflicts are considered **less than significant** and no mitigation is required.

3.7.7 Significance After Mitigation

As indicated in the impact analysis above, impacts associated with the GCSP and the potential for land use conflicts would be **less than significant**.

3.7.8 References

Long Beach, City of. 1973-2010. *Long Beach General Plan.* http://www.lbds.info/planning/advance_planning/general_plan.asp

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City of Long Beach. 2019a. General Plan. Land Use Element. December 2019. http://www.longbeach.gov/globalassets/lbds/media-library/documents/planning/advance/lueude/land-use-element-final-adopted-december-2019.

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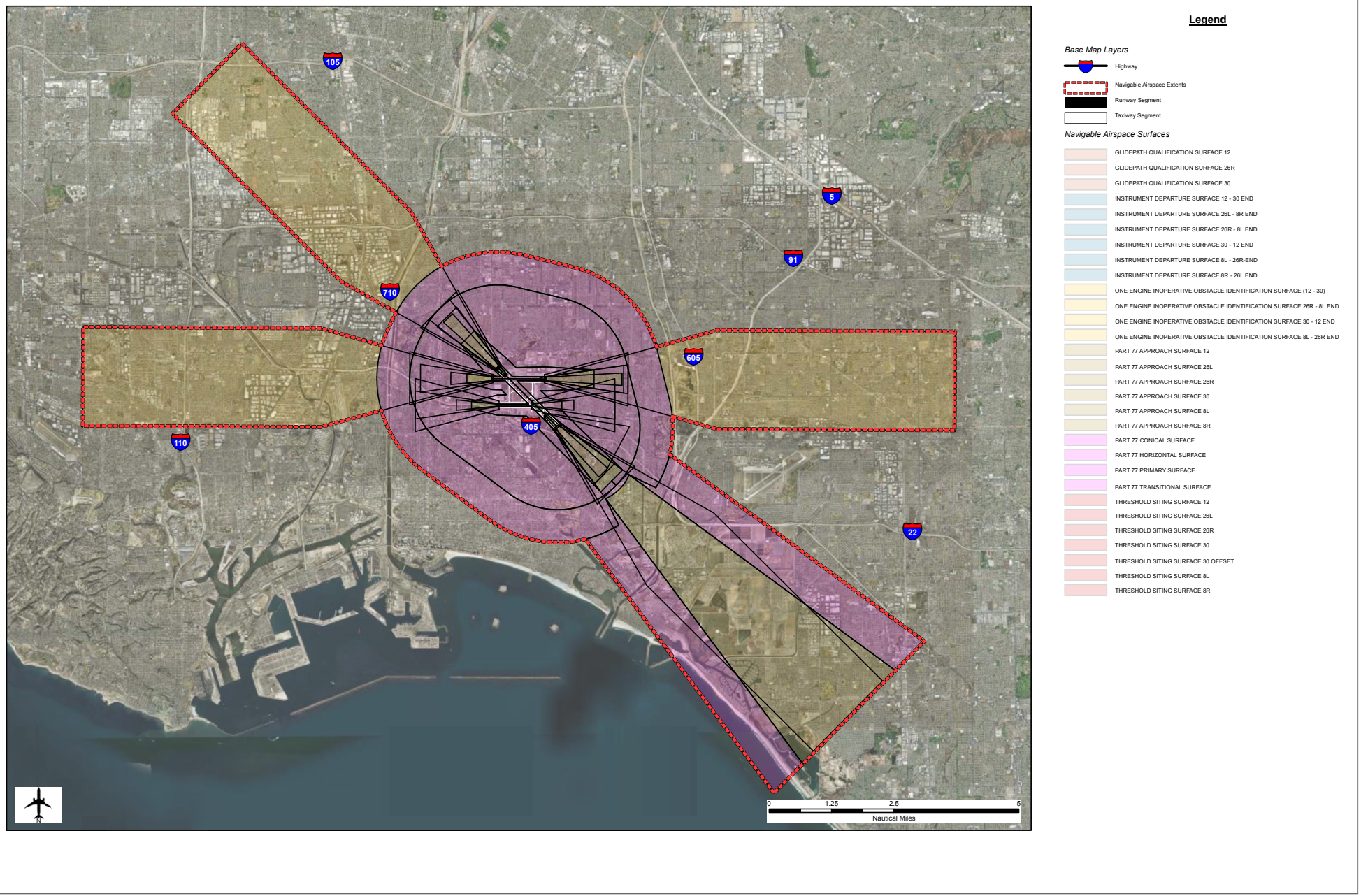

SOURCES: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

FIGURE 3.7-1

Standard for Terminal Instrument Procedures (TERPS) Surfaces

Globemaster Corridor Specific Plan Draft PEIR/PEIS

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3.8 NOISE

This section describes the existing noise conditions of the Globemaster Corridor Specific Plan (GCSP; Proposed Project) site and vicinity, identifies associated regulatory requirements, and evaluates potential noise impacts related to implementation of the Proposed Project. The following discussion focuses on the existing noise setting in the City of Long Beach (City) and more specifically, the Plan Area.

The Initial Study (IS) and Notice of Preparation (NOP) are contained in Appendix A-1, Initial Study; and Appendix A-2, Notice of Preparation, respectively. No comments pertaining to noise were received in response to the NOP (see Appendix A-3, Notice of Preparation Comment Letters).

The IS found that the Proposed Project would have a potentially significant impact as it relates to noise (Appendix A-1). As such, all impacts will be addressed further in this Draft Program Environmental Impact Report (PEIR)/Draft Program Environmental Impact Statement (PEIS).

3.8.1 Existing Conditions

Noise Characteristics

Sound may be described in terms of level or amplitude (measured in decibels [dB]), frequency or pitch (measured in hertz [Hz] or cycles per second), and duration (measured in seconds or minutes). The standard unit of measurement of the amplitude of sound is the decibel. Because the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale is used to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against low and very high frequencies in a manner approximating the sensitivity of the human ear. Table 3.8-1, Typical Sound Levels in the Environment and Industry, provides examples of A-weighted noise levels from common sounds.

Table 3.8-1
Typical Sound Levels in the Environment and Industry

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
—	110	Rock band
Jet flyover at 300 meters (1,000 feet)	100	—
Gas lawn mower at 1 meter (3 feet)	90	—
Diesel truck at 15 meters (50 feet), at 80 kph (50 mph)	80	Food blender at 1 meter (3 feet) Garbage disposal at 1 meter (3 feet)
Noisy urban area, daytime gas lawn mower at 30 meters (100 feet)	70	Vacuum cleaner at 3 meters (10 feet)
Commercial area Heavy traffic at 90 meters (300 feet)	60	Normal speech at 1 meter (3 feet)

Table 3.8-1
Typical Sound Levels in the Environment and Industry

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Quiet urban daytime	50	Large business office Dishwasher, next room
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime	30	Library
Quiet rural night time	20	Bedroom at night, concert hall (background)
—	10	Broadcast/recording studio
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: Caltrans 2013a.
kph = kilometers per hour; mph = miles per hour

Noise is defined as unwanted sound, and is known to have several adverse effects on people, including hearing loss, speech interference, sleep interference, physiological responses, and annoyance. Based on these known adverse effects of noise, the federal government, the State of California, and local agencies have established criteria to protect public health and safety, to prevent disruption of certain human activities, and to minimize annoyance.

Several descriptors of noise (noise metrics) exist to help predict average community reactions to the adverse effects of environmental noise, including traffic-generated noise, on a community. These descriptors include the equivalent noise level over a given period (L_{eq}), the day–night average noise level (L_{dn}), and the community noise equivalent level (CNEL). Each of these descriptors uses units of dBA.

L_{eq} is a sound energy level averaged over a specified time period (usually 1 hour). L_{eq} is a single numerical value that represents the amount of variable sound energy received by a receptor during a time interval. For example, a 1-hour L_{eq} measurement would represent the average amount of energy contained in all the noise that occurred in that 1 hour. L_{eq} is an effective noise descriptor because of its ability to assess the total time-varying effects of noise on sensitive receptors. L_{max} is the greatest sound level measured during a designated time interval or event.

Unlike the L_{eq} metric, L_{dn} and CNEL metrics always represent 24-hour periods, usually on an annualized basis. L_{dn} and CNEL also differ from L_{eq} because they apply a time-weighted factor designed to emphasize noise events that occur during the evening and nighttime hours (when speech and sleep disturbance is of more concern). "Time weighted" refers to the fact that L_{dn} and CNEL penalize noise that occurs during certain sensitive periods. In the case of CNEL, noise occurring during the daytime (7:00 a.m.–7:00 p.m.) receives no penalty. Noise during the evening (7:00 p.m.–10:00 p.m.) is penalized by adding 5 dBA, and nighttime (10:00 p.m.–7:00 a.m.) noise is penalized by adding 10 dBA. L_{dn} differs from CNEL in that the daytime period is defined as 7:00 a.m.–10:00 p.m., thus eliminating the evening period. L_{dn} and CNEL are the predominant criteria used to measure roadway noise affecting residential receptors. These two metrics generally differ from one another by no more than 0.5 to 1 dBA.

Vibration Characteristics

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration can be a serious concern, causing buildings to shake and rumbling sounds to be heard. In contrast to noise, vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of vibration are trains, buses on rough roads, and construction activities, such as blasting, pile driving, and heavy earth-moving equipment.

Several different methods are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings and is usually measured in inches per second. The root mean square amplitude is most frequently used to describe the effect of vibration on the human body and is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure root mean square. The decibel notation acts to compress the range of numbers required to describe vibration (Caltrans 2013b).

High levels of vibration may cause physical personal injury or damage to buildings. However, vibration levels rarely affect human health. Instead, most people consider vibration to be an annoyance that can affect concentration or disturb sleep. In addition, high levels of vibration can damage fragile buildings or interfere with equipment that is highly sensitive to vibration (e.g., electron microscopes). Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible (Caltrans 2013b).

Sensitive Receptors

Noise- and vibration-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would be considered noise- and vibration-sensitive land uses (NSLU) and may warrant unique measures for protection from intruding noise and vibration.

The GCSP boundary is adjacent to residential neighborhoods that are generally west of Cherry Avenue and north of East 32nd Street. These represent the nearest noise-sensitive residential land uses with the potential to be impacted by future projects under the GCSP. The southwestern portion of the City of Lakewood is also near the northern boundary of the Plan Area, with apparent medium/high-density residential uses proximate to Deeboyar Avenue and north of Carson Street, and low-density residential uses north of Greenmeadow Road in the same vicinity. Additional

noise-sensitive receptors considered in this noise impact assessment include the following educational and healthcare facilities:

- Burroughs Elementary School (on East 33rd Street in Signal Hill, between Orange Avenue and Gundry Avenue)
- Westerly School of Long Beach (East 29th Street)
- DeVry University (Kilroy Airport Way)
- Keller Graduate School of Management – Long Beach Center (Kilroy Airport Way)
- HealthCare Partners Urgent Care (2600 Redondo Avenue)
- Pediatric Medical Center (2921 Redondo Avenue, within the Plan Area)

Nearly one-half-mile south of the Plan Area, the Long Beach neighborhood of Sunrise has residential land uses immediately south of Willow Street that are unlikely to be affected by any new stationary noise sources associated with future projects under the GCSP; however, the community may be exposed to increases in project-attributed traffic noise, and as such, this community is included in this impact assessment on that basis.

Additionally, James Madison Elementary School (Paramount Boulevard and Bomberry Street in the City of Lakewood) is approximately 1,800 feet northeast of the northern extent of the Proposed Project, and is thus, also unlikely to experience significant impact from stationary noise sources associated with the Proposed Project. With respect to potential traffic noise impact, this area of Lakewood is north of Carson Street, which is studied in this assessment.

Existing Noise Conditions

The Plan Area is located in an urbanized environment and is subject to typical urban noises, such as noise generated by traffic, stationary noise sources and day-to-day outdoor activities. The predominant noise sources include transportation routes and major stationary sources associated with commercial and industrial land uses. “Transportation noise” typically refers to noise from automobile use, trucking, aircraft, and rail operations. “Stationary noise” typically refers to noise from sources such as heating, ventilation, and air conditioning (HVAC) systems, compressors, power generators, landscape maintenance equipment, and on-site construction activities or machinery associated with local industrial or commercial activities. To quantify the existing outdoor ambient sound environment that encompasses all these sources and to help characterize dominant acoustical contributors, a field survey of sound pressure levels (SPL) was performed and is summarized in the following section.

Ambient Noise Measurements

Noise level measurements were performed near the Plan Area at a total of nine representative locations on November 13, 2018 and December 11, 2018 to quantify the existing outdoor sound environment. Figure 3.8-1, Outdoor Ambient Sound Level Survey Locations, presents these measurement locations with respect to the Plan Area. Table 3.8-2 provides the geographic location (or address), date, and time the SPL measurements were taken. The noise level measurements were made using a Piccolo Sound Level Meter (Serial Numbers [SN] 130625008 and 140317004), which are integrating sound level meters equipped with a 0.5-inch pre-polarized condenser microphone with a pre-amplifier. This type of sound level meter (SLM) meets the current American National Standards Institute (ANSI) standard for a Type 2 (general purpose) SLM. Each SLM had its calibration status checked in the field before and after the measurements, and the measurements were conducted with the microphone positioned approximately five feet above the ground.

During the field survey, observations of the physical settings, environmental conditions, and predominant (audible and/or witnessed) noise sources were noted. Counts of observed vehicles, differentiated by type, were also made at each location as shown in Table 3.8-2. The major noise source at all surveyed representative locations was from traffic noise along local roadways. Other secondary noise sounds commonly included distant traffic noise, rustling leaves, birds, barking dogs, distant aircraft, distant conversations, and other community noises (e.g., sounds from gardening and landscaping activities).

Additionally, the City of Long Beach Existing Conditions Report (ECR) for the General Plan Noise Element Update (City of Long Beach 2018) presents SPL measurements of the outdoor sound environment, performed as recently as May 2017, at a variety of locations that include 256 East Vernon Street in the vicinity of the Sunrise neighborhood (approximately 3,800 feet from the Plan Area). According to these outdoor ambient noise level measurements presented in the City of Long Beach ECR, the measured daytime SPL at this representative community location ranged from 57 to 65 dBA L_{eq} over a two-day period, with an average CNEL of 62 dBA (City of Long Beach 2018).

Establishing Baseline Traffic Noise

The City of Long Beach ECR includes estimates of roadway traffic noise throughout the municipality, based on predictive modeling that used 2017 traffic data available from the Southern California Association of Governments (SCAG). At roadway segments nearest to the measurement locations shown in Table 3.8-2 and Figure 3.8-1, Figure 3 (Area 10) from the City of Long Beach ECR shows that estimated day-night sound level (L_{dn}) values range from 65 to 75 dBA, depending on distance to the roadway centerline (City of Long Beach 2018). This L_{dn} range is generally consistent with the measured L_{eq} value range appearing in Table 3.8-2, assuming the measured

daytime sample L_{eq} values approximate L_{dn} values per Federal Transit Administration (FTA) guidance (FTA 2006), and helps support (along with field observation during the survey) the assertion that roadway traffic noise is the dominant source of measured outdoor ambient sound. Hence, for purposes of this analysis, the measured L_{eq} presented in Table 3.8-2, Measured Outdoor Ambient Noise Levels and Counted Vehicles by Type, or as otherwise referenced herein represents the traffic noise baseline level with respect to roadway segments near the Proposed Project and upon which future conditions will be assessed.

Table 3.8-2
Measured Outdoor Ambient Noise Levels and Counted Vehicles by Type

Survey Tag (ST)	Location/Address	Date	Time	L_{eq}[1] (dBA)	Cars	MT[2]	HT[3]	Bus	MC[4]
1	North of 1802 E Carson St Long Beach, CA 90807	November 13, 2018	09:04 AM to 09:19 AM	75.5	311	6	0	1	2
2	East of 3731 Cherry Ave Long Beach, CA 90807	November 13, 2018	10:12 AM to 10:27 AM	71.8	577	17	15	2	4
3	North of 1840 E 36th St Long Beach, CA 90807	November 13, 2018	11:00 Am to 11:30 AM	62.7	46	0	0	0	0
4	South of 3402 Gaviota Ave Long Beach, CA 90807	November 13, 2018	11:46 AM to 12:01 PM	71.2	156	1	1	1	2
5	South of 3301 Falcon Ave Signal Hill, CA 90755	November 13, 2018	12:18 PM to 12:48 PM	62.5	47	1	0	0	0
6	East of 3323 Walnut Ave Signal Hill, CA 90755	November 13, 2018	12:59 PM to 01:19 PM	66.7	98	2	2	0	0
7	Southwest boundary of Boeing facility	November 13, 2018	01:37 PM to 02:07 PM	60.6	41	1	2	0	0
8	West of 3888 Cherry Ave Long Beach, CA 90807	November 13, 2018	09:39 AM to 09:54 AM	77.1	514	20	6	2	5
9	East Spring Street, approx. 250' east of intersection with California Avenue	December 11, 2018	11:37 AM to 11:52 AM	76.6	343	9	12	0	0

Source: Dudek 2018

1 Equivalent continuous sound level (time-average sound level) in A-weighted decibels
2 Medium Truck
3 Heavy Truck
4 Motorcycle

3.8.2 Regulatory Setting

Federal

Consistent with Section 2 of the City of Long Beach Draft ECR for the General Plan Noise Element Update (City of Long Beach 2018), there are no federal regulations related to noise that would apply to this Proposed Project. However, the FTA offers guidance on assessment of noise and vibration in its *Transit Noise and Vibration Impact Assessment* manual (FTA 2006). The FTA vibration impact criteria, expressed as vibration velocity decibels (VdB) are used in this analysis to assess ground-borne vibration impacts with respect to human annoyance. For instance, for residences and other buildings where people typically sleep (hospitals or lodging), 80 VdB would be considered the threshold for "infrequent" vibration events, defined as fewer than seventy (70) events per day.

State

Government Code Section 65302(g)

California Government Code Section 65302(g) requires the preparation of a Noise Element in a General Plan, which shall identify and appraise the noise problems in the community. The Noise Element shall recognize the guidelines adopted by the Office of Noise Control in the State Department of Health Services and shall quantify, to the extent practicable, current and projected noise levels for the following sources:

- Highways and freeways
- Primary arterials and major local streets
- Passenger and freight on-line railroad operations and ground rapid transit systems
- Aviation and airport-related operations
- Local industrial plants
- Other ground stationary noise sources contributing to the community noise environment.

California General Plan Guidelines

The California General Plan Guidelines, published by the Governor's Office of Planning and Research (OPR), provides guidance for the acceptability of specific land use types within areas of specific noise exposure. Table 3.8-3, Land Use Compatibility for Community Noise Environments, presents guidelines for determining acceptable and unacceptable community noise exposure limits for various land use categories. The guidelines also present adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of

the relative importance of noise pollution. OPR guidelines are advisory in nature. Local jurisdictions, including the City of Long Beach, have the responsibility to set specific noise standards based on local conditions.

Table 3.8-3
Land Use Compatibility for Community Noise Environments

	Community Noise Exposure (dBA CNEL)			
	Normally Acceptable[1]	*Conditionally Acceptable*[2]	*Normally Unacceptable*[3]	*Clearly Unacceptable*[4]
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	75–85
Transit 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, amphitheatres	NA	50–70	NA	65–85
Sports arenas, outdoor spectator sports	NA	50–75	NA	70–85
Playgrounds, neighborhood parks	50–70	NA	67.5–77.5	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

Source: OPR 2017.
CNEL = community noise equivalent level; NA = not applicable
1 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.
2 Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features have been included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.
3 Normally Unacceptable: New construction or development should be discouraged. If new construction of development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise-insulation features must be included in the design.
4 Clearly Unacceptable: New construction or development should generally not be undertaken.

California Airport Land Use Requirements

The Los Angeles County Airport Land Use Commission (ALUC) has adopted an Airport Environs Land Use Plan (AELUP) for Los Angeles County airports including Long Beach Airport. The AELUP criteria for sensitive land uses is 65 dB CNEL for outdoor areas and 45 dB CNEL for indoor areas of residential land uses.

For newly-developed nonresidential indoor occupied spaces falling within the airport 65 dBA CNEL aviation noise contour, the California Green Building Standards Code (a.k.a., "CalGreen") require a 50 dBA hourly L_{eq} threshold on exterior-to-interior noise intrusion (CalGreen 2018).

Local

City of Lakewood General Plan Noise Element

The City of Lakewood Noise Element (1996) identifies noise sources and policies to reduce noise impacts that are a common source of complaints. Many of the goals and implementation programs address efforts to reduce noise impacts from adjacent roadways, railroad rights-of-way, and the Long Beach Airport. Special noise regulations concerning construction are included in the City's Municipal Code.

Goal 1: Maintain or reduce noise levels throughout the city.

> **Policy1.1:** Ensure that new and expanded commercial projects do no generate adverse noise impacts on adjacent residential areas.
>
> **Policy 1.3:** Integrate noise reduction techniques in building plan review process.

City of Lakewood Municipal Code

The City of Lakewood Municipal Code (LMC) includes Section 4240 of Part 4 (Conduct in General), which requires "No person shall make, cause or suffer, or permit to be made upon any premises owned, occupied or controlled by him any unnecessary noises or sounds which are physically annoying to persons of ordinary sensitiveness or which are so harsh or so prolonged or unnatural or unusual in their use, time, or place as to occasion physical discomfort to the inhabitants of any neighborhood." (City of Lakewood 2019).

LMC Section 9376.1 sets a limit of 65 dBA (i.e., up to 5 dB greater than 60 dBA) for noise due to operating machinery (e.g., pumps, fans, air-conditioning) at the property line of a residential use.

LMC Section 8019 limits hours of construction from 7:00 a.m. to 7:00 p.m. on Mondays through Saturdays, and 9:00 a.m. to 7:00 p.m. on Sundays., or as allowed by the Section 8020 of the City of Lakewood Municipal Code.

City of Long Beach General Plan Noise Element

The City of Long Beach Noise Element considers the impacts from producers of stationary noise with standards as shown in Table 3.8-4, City of Long Beach General Plan Recommended Criteria for Maximum Acceptable Noise Levels in A-Weighted Decibels (dBA) (as reproduced from Table 11 in the Noise Element [1975]).

Table 3.8-4
City of Long Beach General Plan Recommended Criteria for Maximum Acceptable Noise Levels[1] in A-Weighted Decibels (dBA)

Major Land Use Type	Stationary Source Land Use Noise Standards			
	Outdoor Maximum Single Hourly Peak	*Outdoor L_{10}*[2]	*Outdoor L_{50}*[3]	*Indoor L_{dn}*[4]
Residential[5] (7:00 AM to 10:00 PM)	70	55	45	45
Residential[5] (10:00 PM to 7:00 AM)	60	45	35	35
Commercial (anytime)	75	65	55	n/a[6]
Industrial (anytime)	85	70	60	n/a[6]

Source: City of Long Beach, General Plan Noise Element (1975), Table 11.

1 Based on existing ambient level ranges in Long Beach and recommended U.S. Environmental Protection Agency ratios and standards for interference and annoyance.

2 Noise level exceeded ten percent (10%) of the time.

3 Noise level exceeded fifty percent (50%) of the time.

4 Day-night average sound level. The 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to nighttime levels.

5 Includes all residential categories and all nose-sensitive land uses (e.g., hospitals and schools).

6 Since different types of commercial and industrial activities appear to be associated with different noise levels, identification of a maximum indoor level for activity interference is unfeasible.

With respect to construction noise, the City of Long Beach ECR refers to FTA Transit Noise and Vibration Impact Assessment (FTA 2006) general assessment guidance for applicable thresholds, which are a one-hour 90 dBA L_{eq} for residential land uses and 100 dBA hourly L_{eq} for commercial and industrial uses.

For consideration of transportation noise changes attributed to the Proposed Project and for the purposes of this noise assessment, the City of Long Beach ECR describes "audible impacts" as being increases in noise level that people can notice, and would be represented quantitatively by a change greater than 3 dB.

City of Long Beach Noise Regulations

The City of Long Beach has adopted a quantitative Noise Control Ordinance ("noise ordinance", LBMC Chapter 8.80), which sets forth all noise regulations controlling unnecessary, excessive, and annoying noise and vibration in Long Beach. As outlined in Section 8.80.150 of the LBMC, maximum exterior noise levels are based on land use districts. The Long Beach Noise Control Ordinance also governs the time of day that construction work can be conducted. Section 8.80.202 of the noise ordinance prohibits construction, drilling, repair, alteration, or demolition work between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, between the hours of 7:00 p.m. on Friday and 9:00 a.m. on Saturday, and after 6:00 p.m. on Saturday, or at any time on Sundays or federal holidays unless allowed by the Long Beach Noise Control Officer (City of Long Beach 2020). Table 3.8-5, City of Long Beach Maximum Noise Criteria, summarizes the exterior sound level criteria from LBMC Section 8.80.160.

Table 3.8-5
City of Long Beach Exterior Noise Limits

Receiving Land Use District	Hourly Noise Criteria (dBA L_{eq})	
	Daytime (7:00 AM to 10:00 PM)	*Nighttime (10:00 PM to 7:00 AM)*
District One — Predominantly residential with other land use types also present	50	45
District Two — Predominantly commercial with other land use types also present	60	55
District Three — Predominantly industrial with other land use types also present [1]	65	65
District Four — Predominantly industrial with other land types use also present [1]	70	70
District Five — Airport, freeways, and waterways regulated by other agencies	Regulated by other agencies and laws	

Source: City of Long Beach 2020.
[1] Districts Three and Four limits are intended primarily for use at their boundaries rather than for noise control within those districts.

City of Signal Hill General Plan Noise Element

The City of Signal Hill Noise Element (City of Signal Hill 2009) 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 3.8-3, Land Use Compatibility for Community Noise Environments). The City of Signal Hill established the standards identified in Table 3.8.6, City of Signal Hill Noise Compatibility Criteria by Land Use, as the primary tools to ensure compatibility between land uses and outdoor ambient noise.

Table 3.8-6
City of Signal Hill 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: Table 8, Noise Compatibility Criteria by Land Use, City of Signal Hill 2009.

The Signal Hill Noise Element includes the following policies that are applicable to potential noise impacts of projects:

Goal 1: Protect the health, safety, and welfare of people living and working within the city from adverse noise impacts.

> **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.

The City of Signal Hill Noise Ordinance from Chapter 9.16 of the Signal Hill Municipal Code (SHMC) establishes noise limit standards on a variety of activities and sources that include building construction, vehicular, and industrial noise. The City of Signal Hill Noise Element also acknowledges that the City of Long Beach has implemented an Airport Noise Compatibility Ordinance (Chapter 16.43, Long Beach Municipal Code) that limits noise for neighborhoods in both Signal Hill and Long Beach. In summary, the Airport Noise Compatibility Ordinance includes: establishment of a Single Event Noise Exposure Level (SENEL) standard (for non-governmental aircraft operating at the Long Beach Airport), with standards varying per runway location and time of day. Lower SENEL values are expected during evening and nighttime hours.

City of Signal Hill Noise Regulation

SHMC Section 9.16.060 sets a stationary source noise limit of no more than 5 dB over the existing outdoor ambient noise level. Where not measured, SHMC Section 9.16.020 presumes the outdoor ambient base noise level is a fixed value that varies with zone as shown in Table 3.8-7, City of Signal Hill Presumed Ambient Base Noise Level.

Table 3.8-7
City of Signal Hill Presumed Ambient Base Noise Level

Zone	Ambient Base Noise Level (dBA)	
	Daytime (7:00 AM to 10:00 PM)	*Nighttime (10:00 PM to 7:00 AM)*
Residential	60	50
Commercial	65	60
Industrial	70	70

Source: City of Signal Hill 2018.

Thus, and by way of example, the threshold for stationary operating noise sources such as HVAC equipment as received by a residential zone would be 55 dBA L_{eq} at night, or as modified by the following decibel adjustments per SHMC 9.16.060.A:

- Noise persists for more than five minutes out of any one hour – no adjustment
- Noise persists for more than one minute but not more than five minutes out of any one hour – subtract 5 dB
- Noise persists for one minute or less out of any one hour – subtract 10 dB
- Add one and only one of the following corrections for unusual character:
    - Noise has no unusual character – no adjustment
    - Noise contains a piercing pure tone – add 5 dB
    - Noise is impulsive or rattling in nature – add 5 dB
    - Noise carries speech, music, or other information content – add 5 dB

Per SHM 9.16.050, construction activities are permitted in Signal Hill on weekdays between 7:00 a.m. and 6:00 p.m., or as allowed by the City of Signal Hill building official.

Vibration Standards

The California Environmental Quality Act (CEQA) states that the potential for any excessive ground-borne noise and vibration levels must be analyzed; however, it does not define the term "excessive" vibration. Numerous public and private organizations and governing bodies have provided guidelines to assist in the analysis of ground-borne noise and vibration. The City of Long Beach ECR references the FTA vibration velocity thresholds for building damage risk impacts due to ground-borne vibration. Per Section 8.80.200 of the LBMC, device operation vibration is limited to a human perception threshold of 0.001 g of acceleration from 0-30 Hertz (Hz) and 0.003 g between 30 and 100 Hz. These vibration acceleration values translate into 0.002 inches/second and 0.008 inches/second for vibration at 30 Hz.

3.8.3 Thresholds of Significance

The following significance criteria, included in Appendix G of the State CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of a noise impact. Impacts related to noise would be significant if the Proposed Project would:

A. Generate 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.

B. Generate of excessive groundborne vibration or groundborne noise levels.

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, expose people residing or working in the project area to excessive noise levels.

The IS found that the Proposed Project would have a potentially significant impact as it relates to noise (Appendix A-1). As such, all impacts will be addressed further in this Draft Program Environmental Impact Report (PEIR)/Draft Program Environmental Impact Statement (PEIS).

For each of the three above-listed criteria, the Initial Study estimated that impacts would be potentially significant. Quantitative thresholds of significance have been established for the purposes of this analysis based on the local polices and regulations described in Section 3.8.2, Regulatory Setting. These thresholds are listed below.

- For residential noise-sensitive receptors located in the City of Long Beach, the noise limits for stationary sources of noise are 50 dBA L_{eq} during daytime hours (7 a.m. to 10 p.m.) and 45 dBA L_{eq} at night (7 a.m. to 10 p.m.).
- For residential noise-sensitive receptors located in the City of Signal Hill, the noise limit for stationary sources of noise is that they cause no more than a 5 dB increase above the existing ambient noise level, which is presumed to be (i.e., if not measured or otherwise quantified) 60 dBA during the daytime hours and 50 dBA at night per SHMC Section 9.16.020 as shown in Table 3.8-7.
- At the property lines of residential noise-sensitive receptors located in the City of Lakewood per LMC 9376.1, the noise limit for stationary sources of noise is 65 dBA.
- Consistent with the City of Long Beach ECR definition of an "audible impact", off-site noise impacts due to project-attributed traffic would be considered significant if the project-generated traffic causes an increase of 3 dB or more above existing traffic noise levels.
- Consistent with the City of Long Beach ECR, a daytime 90 dBA hourly L_{eq} (with 80 dBA at night) at residential NSLU and 100 dBA hourly L_{eq} (anytime) applies for construction noise.
- Per the City of Long Beach ECR, the range of vibration threshold perception ranges from 0.008 to 0.012 inches/second; however, with respect to the potential for building damage risk, the City of Long Beach ECR refers to Federal Transit Administration (FTA) guidance that suggests 0.2 inch per second as an impact threshold for "non-engineered timber and masonry," which could reasonably describe most residential uses in the vicinity of the Proposed Project.

3.8.4 Impacts Analysis

a) Would the project generate 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?

On-site noise-generating activities and sources associated with the Proposed Project would include successive (and sometimes concurrent) short-term construction projects, as well as long-term operations (due to introduction of new stationary noise-producing sources, such as HVAC systems, and changes to transportation). These potential effects are analyzed below.

Construction Noise (Short-Term Impacts)

Construction noise and vibration are temporary phenomena. Construction noise and vibration levels vary from hour to hour and day to day, depending on the equipment in use, the operations being performed, and the distance between the source and receptor.

The Proposed Project is expected to involve the creation of landscaped areas as part of street improvements on existing streets such as Cherry Avenue, and a variety of demolition and construction activities associated with individual projects in various planned zones across the GCSP. The future implementation pattern and timing of land use development projects which could be allowed under the Proposed Project remain speculative; hence, there is no reliable method of estimating which future developments might be under construction simultaneously. As such, the following general assessment is appropriate as a programmatic level of review for this type of project.

Equipment that would be in operation during construction would include excavators, backhoes, scrapers, forklifts, compressors, paving equipment, and haul trucks. According to FTA guidance, the typical maximum noise levels for various pieces of construction equipment at a distance of 50 feet range from 76 to 88 dBA L_{max}. Typically, construction equipment operates in alternating cycles of full power and low power, producing time-averaged noise levels less than these presented maximum noise levels. Nonetheless, impacts were conservatively evaluated assuming the highest value (88 dBA) of this maximum noise level range.

Consistent with the FTA-based general assessment technique that assumes the two loudest pieces of construction equipment on site are operating at full power (and thus individually generating noise at L_{max} values), the logarithmic sum of 91 dBA at 50 feet would represent expected construction noise. With sound attenuating from a point source at approximately 6 dB per doubling of distance, and conservatively neglecting additional attenuation due to

atmospheric absorption and porous ground cover, or the potential noise-reducing benefit of intervening structures, NSLU within 60 feet of a construction site could be affected by noise levels over 90 dBA. NSLU along the west side of Cherry Avenue could be located within this impacted distance. But for NSLU that are more distant from expected Proposed Project construction areas, such as the Westerly School of Long Beach (approximately 600 feet from the southern GCSP boundary, across the Interstate 405 highway), received construction noise would be much lower in magnitude and not anticipated to reach significantly impactful levels.

Although these nearby off-site residences would be exposed to elevated construction noise levels, the exposure would be short-term, and would cease upon completion of project construction. Further, the City of Long Beach, the City of Lakewood, and the City of Signal Hill generally limit construction activity to daytime hours. However, circumstances might create the opportunity (as allowed by the municipality proximate to the activity) for nighttime construction noise to occur outside of normally permitted hours. Under such conditions, and using the City of Long Beach as an example, the City of Long Beach ECR refers to an FTA-based general assessment guidance limit of 90 dBA hourly L_{eq} during daytime hours for construction noise. The same FTA guidance indicates that at night, the applicable threshold would be 80 dBA hourly L_{eq} (FTA 2006); hence, the impact distance during nighttime hours expands to 180 feet (i.e., from the acoustic emission point within the construction site representing the concurrently operating two pieces of equipment) and would potentially expose more NSLU to adverse noise effects.

On this basis, noise impacts from construction are considered potentially significant. Excessive noise occurrence in the overnight period results in the greatest potential impact to NSLU, via sleep disruption. Mitigation measure **MM-NOI-1**, which prohibits construction in the overnight period, addresses the single most important aspect of construction noise impact. Mitigation measure **MM-NOI-2** aims to reduce the maximum construction noise levels experienced at NSLU, bringing the noise levels more in alignment with the magnitude of traffic noise along major roadways in the community. Construction noise would consequently remain noticeable at nearby residences, but likely would not be a substantial irritant on the basis of it having a magnitude and character (e.g., operating fuel-burning engines) comparable to pre-existing roadway traffic.

CEQA Impact Determination

The suite of controls required as part of mitigation measures **MM-NOI-1** and **MM-NOI-2**, if implemented properly, is expected to result in a reduction of maximum construction noise levels in the range of 10-15 dBA (especially if a temporary sound barrier is installed and obscures line-of-sight between the construction activity noise source(s) and the

sensitive receptor of concern). Therefore, temporary construction-related noise impacts would be a **less than significant impact with mitigation incorporated** under CEQA.

NEPA Impact Determination

The suite of controls required as part of mitigation measures **MM-NOI-1** and **MM-NOI-2**, if implemented properly, is expected to result in a reduction of maximum construction noise levels in the range of 10-15 dBA (especially if a temporary sound barrier is installed and obscures line-of-sight between the construction activity noise source(s) and the sensitive receptor of concern). Therefore, temporary construction-related noise would result in **no adverse effect** under NEPA.

Operational Noise (Long-Term Impacts)

The primary off-site noise-related effect that future development under the Proposed Project could have is an increase in proximate roadway traffic, which is the main source of noise in most areas. As such, the following analysis discusses off-site roadway noise effects.

Future developments under the Proposed Project would generate traffic along various arterial roadways. For the purposes of this analysis, increases in traffic noise would be considered significant when they cause an increase of 3 dB or more compared to existing noise levels at the nearest NSLU to the studied roadway segment, which are listed below:

- Carson Street (west of Cherry Avenue) – residences south of Carson St.;
- Carson Street (east of Shopping Center) – residences in Lakewood north of Carson St.;
- Cherry Avenue (north of Cover Street) – residences west of Cherry Ave.;
- Cherry Avenue (south of Bixby Road) – residences west of Cherry Ave.;
- 36th Street (west of Cherry Avenue) – residences west of Cherry Ave.;
- East Wardlow Road (west of Cherry Avenue) – residences north of E. Wardlow Rd.;
- Spring Street (east of California Avenue) – planned new community open space south of Spring St.;
- Kilroy Airport Way (south of Spring Street) – school buildings (DeVry University and Keller School of Management) east of Kilroy Airport Way;
- Orange Avenue (north of 32nd Street) – nearby school (Burroughs Elementary); and,
- Willow Street (west of California Avenue) – residences south of Willow St.

Assuming the proportion of vehicle types on a roadway segment, and the vehicle speeds, remain comparable between an existing and a future scenario, traffic noise varies logarithmically with traffic volume. For example, traffic noise would be expected to rise by 3 dB if the traffic volume doubled under these conditions. Using both existing and future projections of peak hour traffic volumes from the Traffic Impact Analysis (TIA, LLG 2020) for representative roadway segments nearest to the NSLU where existing outdoor noise levels were measured, Table 3.8-8, Predicted Increases in Traffic Noise (over Existing) Attributed to the Proposed Project, presents anticipated increases in existing traffic noise levels due to addition of traffic volumes from the Proposed Project.

Table 3.8-8
Predicted Increases in Traffic Noise (over Existing) Attributed to the Proposed Project

Roadway Segment	Existing Daytime L_{eq} (dBA)[1]	Existing Morning Peak Hour Traffic Volume (vehicles)	Existing Afternoon Peak Hour Traffic Volume (vehicles)	Existing + Proposed Project Morning Peak Hour Traffic Volume (vehicles)	Existing + Proposed Project Afternoon Peak Hour Traffic Volume (vehicles)	Estimated Increase in Morning Outdoor Ambient Sound Level (dB)	Estimated Increase in Afternoon Outdoor Ambient Sound Level (dB)
Carson Street (west of Cherry Avenue)	75	1686	2119	1680	2107	-0.02	-0.02
Carson Street (east of Shopping Center)	75	2265	2727	2262	2718	-0.01	-0.01
Cherry Avenue (north of Cover Street)	77	2665	2868	3581	3942	1.28	1.38
Cherry Avenue (south of Bixby Road)	72	3185	3570	4101	4644	1.10	1.14
36th Street (west of Cherry Avenue)	63	126	235	126	235	0.00	0.00
East Wardlow Road (west of Cherry Avenue)	71	865	1074	1324	1582	1.85	1.68
Spring Street (east of California Avenue)	77	1674	2054	1722	2118	0.12	0.13
Kilroy Airport Way (south of Spring Street)	n/a	771	773	771	773	0.00	0.00
Orange Avenue (north of 32nd Street)	62	1313	1434	1364	1533	0.17	0.29
Willow Street (west of California Avenue)	62	2577	2849	2696	3002	0.20	0.23

Source: LLG 2020, Dudek 2018.
[1] Representative, from measured sound pressure level (see Table 3.8-2) nearest to indicated roadway segment in proximity to NSLU.

Table 3.8-9, Predicted Increases in Traffic Noise (over Year 2040) Attributed to the Proposed Project, provides a similar traffic noise increase analysis, but with respect to the anticipated 2040 Year traffic volumes and the expected change due to the Proposed Project.

Table 3.8-9
Predicted Increases in Traffic Noise (over Year 2040) Attributed to the Proposed Project

Roadway Segment	Year 2040 Morning Peak Hour Traffic Volume (vehicles)	Year 2040 Afternoon Peak Hour Traffic Volume (vehicles)	Year 2040 + Proposed Project Morning Peak Hour Traffic Volume (vehicles)	Year 2040 + Proposed Project Afternoon Peak Hour Traffic Volume (vehicles)	Estimated Increase in Morning Outdoor Ambient Sound Level (dB)	Estimated Increase in Afternoon Outdoor Ambient Sound Level (dB)
Carson Street (west of Cherry Avenue)	1774	2231	1768	2219	-0.01	-0.02
Carson Street (east of Shopping Center)	2409	2897	2406	2888	-0.01	-0.01
Cherry Avenue (north of Cover Street)	2830	3043	3746	4117	1.22	1.31
Cherry Avenue (south of Bixby Road)	3387	3793	4303	4867	1.04	1.08
36th Street (west of Cherry Avenue)	126	235	126	235	0.00	0.00
East Wardlow Road (west of Cherry Avenue)	865	1074	1324	1582	1.85	1.68
Spring Street (east of California Avenue)	1759	2156	1807	2220	0.12	0.13
Kilroy Airport Way (south of Spring Street)	771	773	771	773	0.00	0.00
Orange Avenue (north of 32nd Street)	1383	1508	1434	1607	0.16	0.28
Willow Street (west of California Avenue)	2729	3017	2848	3170	0.19	0.21

Source: LLG 2020.
[1] Representative, from measured sound pressure level (see Table 3.8-2) nearest to indicated roadway segment in proximity to NSLU.

As shown in Tables 3.8-8 and 3.8-9, future project-attributed changes to traffic volumes at the studied roadway segments near NSLU would result in traffic noise level increase of less than 2 dB, and therefore, below the significance threshold of 3 dB. Further, the Proposed Project would comply with all jurisdictions along public right-of-way areas. Therefore, traffic related to future development and street improvements under the Proposed Project would not substantially increase the existing noise levels in the vicinity,

and there would be **no impact** from operational traffic-related noise. **No mitigation is required** for off-site traffic noise.

Warehousing is already included as an expected industrial land use as part of the TIA, and thus, the future roadway segment volumes presented in Tables 3.8-8 and 3.8-9 already include its predicted contributions. Were specific projects implemented as part of the Proposed Project to include distribution centers, and if such installations were to create greater localized increases in roadway traffic, the presented traffic noise increases shown in Tables 3.8-8 and 3.8-9 suggest that such hypothetical increases (under the right conditions) could be accommodated and still result in an anticipated less than significant impact. This is because, due to acoustical principles, increases in traffic volumes (assuming same vehicle speeds, which would be anticipated due to existing roadway posted limits) would need to be more than a doubling of existing (or future, as appropriate) traffic volumes in order to effect greater than a 3 dB change. The only studied roadway segment that even approaches this possibility is East Wardlow Road, which as shown, is currently not expected to experience more than a 2 dB increase in noise level.

On-site Stationary Noise Sources

Future development under the Proposed Project could create new stationary noise sources, such as HVAC systems, power generators, refrigeration compressors, pumps, and other electromechanical or fluid handling equipment. Sound emissions from these operating equipment would need to comply with the municipal noise ordinances of Long Beach, Lakewood, and Signal Hill. With respect to the former, Table 3.8-4 presents the applicable thresholds for residential NSLU and would consequently require noise-producing machinery (or other stationary noise source) from a newly-developed project to not exceed a median sound level (i.e., L_{50}) of 45 dBA during the daytime and 35 dBA L_{50} at night.

To meet these thresholds, and by way of example, a typical 3-ton (of refrigeration performance) packaged air handling unit exhibits a sound pressure level of 71 dBA at one meter (York 2018). Were such machinery operating at night for a proposed new retail facility on the east side of Cherry Avenue across from existing NSLU on the west side of the street, it would need to be no closer than 210 feet away without some sort of noise-reducing project design feature. HVAC system components of this type and any larger, more powerful, and otherwise noisier equipment would similarly need to be located at sufficient distances from the NSLU as part of the design and implementation of future development. Amplified music from speakers installed at restaurants and other retail establishments would also need to be designed to emit sound levels that comply with the stationary source standards. Mitigation measure **MM-NOI-3** requires that future applicants for commercial and industrial developments within the Plan Area retain an acoustical

specialist to review development project construction-level plans. The acoustical specialist shall have the responsibility to ensure that the equipment specifications and plans for HVAC and other outdoor mechanical equipment incorporate measures, such as the specification of quieter equipment or provision of acoustical enclosures, that will avoid exceeding relevant noise standards. So long as these stationary sound emission sources are designed and implemented to comply with the noise ordinance limits at the exteriors of proximate NSLU, noise impacts would be considered less than significant with proper implementation of mitigation measure **MM-NOI-3**.

CEQA Impact Determination

In summary, mitigation measure **MM-NOI-3** requires involvement of an acoustical specialist with the responsibility to ensure that the equipment specifications and plans for HVAC and other outdoor mechanical equipment incorporate measures, such as the specification of quieter equipment or provision of acoustical enclosures or other sound abatement, are features of the project design. As a result, operational impacts would be **less than significant with mitigation incorporated** under CEQA.

NEPA Impact Determination

In summary, mitigation measure **MM-NOI-3** requires involvement of an acoustical specialist with the responsibility to ensure that the equipment specifications and plans for HVAC and other outdoor mechanical equipment incorporate measures, such as the specification of quieter equipment or provision of acoustical enclosures or other sound abatement, are features of the project design. As a result, during operations, there would be **no adverse effects** under NEPA.

b) Would the project generate excessive groundborne vibration or groundborne noise levels?

Construction activities that might expose persons to excessive ground-borne vibration or ground-borne noise could cause a potentially significant impact. Ground-borne vibration information related to construction activities has been collected by the California Department of Transportation (Caltrans 2013). Information from Caltrans indicates that continuous vibrations with a peak particle velocity (PPV) of approximately 0.1 inch/second begin to annoy people. Heavy pieces of construction equipment, such as large bulldozers and vibratory rollers, have reference PPV values of 0.089 inches/second and 0.210 inches/second respectively at a distance of 25 feet (DOT 2006). Because ground-borne vibration attenuates rapidly over short distances, at the closest distance between existing residential NSLU and the proposed construction areas (approximately 60 feet), expected vibration from a vibratory roller involved in street improvements would be 0.056 inches per second or less. While this predicted PPV is less than the Caltrans threshold for human

annoyance, it is higher than the 0.008 inches/second PPV as allowed by LBMC 8.80.200. Implementation of mitigation measure **MM-NOI-2** would ensure residences are notified of construction activities and provided contact information in the event they wish to report a noise- or vibration-related complaint. Advance notification eliminates the element of surprise, and establishes expectations to avoid fear regarding potential prolonged operations. The ability to contact a project representative if vibration is perceived to be excessive or damaging provides the opportunity for operations to be modified as necessary, or for compensation to be awarded in the event that accidental damage occurs.

The major concern with regard to construction vibration is related to building damage. Construction vibration as a result of developing future projects under the Proposed Project would not result in structural building damage, which typically occurs at vibration levels of 0.5 inches per second or greater for buildings of reinforced-concrete, steel, or timber construction. For non-reinforced timber and masonry structures, the threshold is less (0.2 inches per second) but still higher than the afore-stated estimate of 0.056 inches per second with respect to nearest vibratory roller operation during construction activities. Further, pile driving, blasting, or other special construction techniques are not anticipated to be needed for construction of developments allowed under the Proposed Project; therefore, excessive ground-borne vibration and ground-borne noise would not be generated.

CEQA Impact Determination

With respect to human annoyance, impacts related to ground-borne vibration from construction activities are considered to be a less than significant impact with mitigation measure **MM-NOI-2** incorporated. Impacts would be less than significant with mitigation incorporated under CEQA.

NEPA Impact Determination

With respect to human annoyance, effects related to ground-borne vibration from construction activities are considered to be not adverse with mitigation measure **MM-NOI-2** incorporated. As such, there would be **no adverse effect** under NEPA. Groundborne vibration from normally anticipated stationary operating equipment associated with development implemented under the Proposed Project would be expected to be minimal and at magnitudes either lower than or indistinguishable from typical ambient vibration that is largely the result of roadway traffic or current airport operations. HVAC systems and other electro-mechanical equipment (pumps, air compressors, generators, etc.) with rotating or reciprocating elements that might cause mechanical vibration are usually designed to exhibit very low levels of vibration, since the occurrence of undue vibration in such operating equipment indicates an imbalance or operation fault that could lead to

reduced operational life or failure of the equipment. Such systems are also typically vibration-isolated from structures by means of springs or pads, so that the vibration energy transmitted to ground prior to propagation out to the off-site communities would be dramatically reduced.

CEQA Impact Determination

With respect to human annoyance, impacts related to ground-borne vibration from operation of stationary sources (i.e., electro-mechanical equipment) installed as a result of site-specific development due to Proposed Project implementation are considered to be a **less than significant impact** and would thus not require mitigation under CEQA.

NEPA Impact Determination

With respect to human annoyance, effects related to ground-borne vibration from operation of stationary sources (i.e., electro-mechanical equipment) installed as a result of site-specific development due to Proposed Project implementation are considered to be **not adverse** and would thus not require mitigation under NEPA.

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??

Development of the Proposed Project, as currently contemplated under the GCSP, does not include the creation of any new residential land uses. Therefore, the GCSP would not expose new residents to excessive noise within the existing Long Beach Airport 65 dBA CNEL contours, as depicted in Figure 4 of the City of Long Beach ECR.

The Proposed Project does anticipate development of a Business Park (BP) district bounded by the Long Beach Airport to the north, south, and east. The portion of the BP expected to be located within the aforementioned 65 dBA CNEL contour is currently identified by the Proposed Project land use and mobility plan as being within the Community Commercial (CC) district planned north of the intersection between Hudson Avenue and Cover Street, and as such will create an opportunity for workers to be exposed to airport noise levels exceeding 65 dBA CNEL. At this location, anticipated noise impacts would be significant for development of exterior usage areas that might include restaurant patios, hotel balconies and outdoor recreation areas, and outdoor retail areas. Mitigation measure **MM-NOI-4** requires applicants for commercial and industrial developments within these areas within the Proposed Project Community Commercial (CC) district to retain an acoustical specialist to review development project construction-level plans. The

acoustical specialist shall have the responsibility to ensure that the design, location, and orientation (e.g., facing with respect to Long Beach Airport operations) of outdoor use areas will not expose facility occupant and visitors to airport operations noise levels greater than 65 dBA CNEL. Implementation of mitigation measure **MM-NOI-4** would help ensure that such developed outdoor occupied spaces feature noise reduction that keeps airport activity noise contribution to a level below 65 dBA CNEL. For the interior occupied spaces of these newly developed nonresidential land uses, Section 5.507.4.1 and 5.507.4.2 of the CalGreen building code would apply where the building locations are within the 65 dBA CNEL contour of the airport. The latter of these requirements, 5.507.4.2, establishes an interior background noise threshold of 50 dBA hourly Leq with respect to exterior-to-interior noise intrusion. Mitigation measure **MM-NOI-5** requires applicants for commercial and industrial developments within these areas within the Proposed Project Community Commercial (CC) district to retain an acoustical specialist to review development project construction-level plans. The acoustical specialist shall have the responsibility to ensure that the design and materials of sound insulating assemblies will be sufficient to yield interior background sound levels attributed to exterior-to-interior noise intrusion to no more than 50 dBA hourly Leq. Mitigation measure **MM-NOI-5** would be implemented to help ensure that such developed nonresidential indoor occupied spaces yield sufficient noise reduction for keeping airport activity noise intrusion to a level below 50 dBA hourly L_{eq}.

CEQA Impact Determination

Mitigation measures **MM-NOI-4** and **MM-NOI-5** would implement noise reduction features that ensure the potential airport activity noise contribution is below a level of significance. As such, this anticipated noise impact would be considered **less than significant with mitigation incorporated**.

NEPA Impact Determination

Mitigation measures **MM-NOI-4** and **MM-NOI-5** would implement noise reduction features that ensure the potential airport activity noise contribution is not adverse. As such, this anticipated noise is **not an adverse effect**.

3.8.5 Cumulative Impacts

Noise in Excess of Standards

The Proposed Project and related development projects within its area would all be subject to applicable noise standards (descriptions of the standards applicable within the municipalities of Long Beach and Signal Hill are described throughout this section). The Proposed Project would

incorporate mitigation measures, as described in Section 3.8.6, to ensure compliance with applicable noise standards. With the incorporation of the mitigation measures described in Section 3.8.6 below, the Proposed Project would not contribute to cumulative exceedances of noise standards, and its incremental effect is considered a **less than significant impact with mitigation incorporated**.

Temporary/Periodic Increases in Ambient Noise Levels

The Proposed Project would result in temporary noise increases during construction of future developments arising from its implementation, as discussed under item 3.8.4(a) above. The construction period of future developments under the Proposed Project has the potential to overlap with the construction of other projects in the sub-region. Due to the decrease in noise levels with distance and the presence of physical barriers, the related projects would not combine with future development under the propose project to produce a cumulative noise effect during construction. Additionally, all future development under the Proposed Project would be required to comply with limits on allowable construction hours per relevant portions of Long Beach, Lakewood, and Signal Hill noise ordinances. The implementation of the mitigation measures described in Section 3.8.6 below, along with the requirement to comply with applicable municipal regulations, would reduce future projects' incremental effect, ensuring that cumulative impacts are **less than significant**.

Vibration

Construction-related vibration from future development under the Proposed Project was addressed under item 3.8.4(b) above. Other foreseeable projects within the vicinity of the Plan Area would not be close enough to create a combined excessive generation of groundborne vibration. Therefore, with the implementation of mitigation measures described in Section 3.8.6 below, cumulative impacts associated with excessive groundborne vibration is considered **less than significant impact**.

Permanent Increase in Ambient Noise Levels

Stationary Sources. Long-term operational noise would result from operation of future development under the Proposed Project, such as permanent on-site noise sources (e.g., HVAC equipment), as addressed under item 3.8.4(a) above. A cumulative impact could result if noise produced resulting from implementation of the Proposed Project were to combine with noise produced from the operation of other related projects in the vicinity to create a cumulatively significant permanent increase in ambient noise levels. However, the operation of future projects under the Proposed Project, along with the operation of other related projects, would be subject to applicable requirements from the noise ordinances of the City of Long Beach, City of Lakewood, and the City of Signal Hill, which limit the exterior noise levels at residences and the allowable increase in outdoor ambient noise level, respectively. Implementation of mitigation measure **MM-**

NOI-3 would help ensure that future development under the Proposed Project complies with these noise standards. Similarly, other related projects would also be required to comply with the same noise standards, as applicable. Compliance with these municipal noise control ordinances would reduce the operational noise of future projects under the Proposed Project such that its incremental effect is not cumulatively considerable. As such, cumulative impacts to ambient noise levels is considered **less than significant impact with mitigation incorporated**.

Off-Site Traffic Noise. Future development under the Proposed Project along with other related projects would generate off-site traffic noise. When calculating future traffic impacts, the traffic study included traffic from related projects in the traffic model. Thus, future traffic results with and without the Proposed Project already account for the cumulative impacts from related projects contributing to traffic increases. Since the noise impacts are generated directly from the traffic analysis results, the Existing and Year 2040 traffic with and without Proposed Project predicted increases in traffic noise levels described herein already reflect cumulative impacts. As described herein, the noise level increases associated with both of these scenarios would generate a noise level increase of less than 3 dBA along the studied sample roadways in the vicinity of the Proposed Project. As such, anticipated increases would be below the significance threshold of 3 dBA for all three studied jurisdictions; hence, the incremental effect of the Proposed Project on off-site traffic noise is not cumulatively considerable. Cumulative off-site traffic noise impacts are thus considered **less than significant**.

3.8.6 Mitigation Measures

Noise mitigation measures for the Proposed Project are described below:

Construction

MM-NOI-1 Construction activities associated with the Proposed Project shall take place only during the permitted times and days per the City of Long Beach, City of Lakewood, and City of Signal Hill noise ordinances, respectively, for the NSLU under consideration.

MM-NOI-2 The City of Long Beach shall enforce adherence to the following measures for all future construction projects implemented under the Proposed Project, as a pre-requisite to approving necessary permits to proceed:

a. The project contractor shall, to the extent feasible, submit a construction noise management plan (CNMP) prepared or reviewed by a qualified acoustician (retained at the expense of the project applicant or construction contractor) that features the following:

i. A detailed construction schedule, at daily (or weekly, if activities during each day of the week are typical) resolution and correlating to areas or

zones of on-site project construction activity(ies) and the anticipated equipment types and quantities involved. Information will include expected hours of actual operation per day for each type of equipment per phase; and, indication of anticipated concurrent construction activities onsite.

ii. Suggested locations of a set of noise level monitors, attended by a qualified acoustician or another party under its supervision or direction, at which sample outdoor ambient noise levels will be measured and collected over a sufficient sample period and subsequently analyzed (i.e., compared with applicable time-dependent dBA thresholds) to ascertain compliance with the hourly FTA guidance-based limit of 90 dBA L_{eq}. Sampling shall be performed, at a minimum, on the first (or otherwise considered typical construction operations) day of each distinct construction phase.

iii. If sample collected noise level data indicates that the hourly noise threshold has or will be exceeded, construction work shall be suspended (for the activity or phase of concern) and the project applicant/owner or construction contractor shall implement one or more of the following measures as detailed or specified in the CNMP:

1) Administrative controls (e.g., reduce operating time of equipment and/or prohibit usage of equipment type[s] within certain distances).

2) Engineering controls (upgrade noise controls, such as install better engine exhaust mufflers).

3) Install noise abatement on the site boundary fencing (or within, as practical and appropriate) in the form of sound blankets or comparable temporary barriers to occlude construction noise emission between the site (or specific equipment operation as the situation may define) and the noise-sensitive receptor(s) of concern.

The implemented measure(s) will be reviewed or otherwise inspected and approved by the qualified acoustician (or another party under its supervision or direction) prior to resumption of the construction activity or process that caused the measured noise concern or need for noise mitigation. Noise levels shall be re-measured, after installation of said measures, to ascertain post-mitigation compliance with the noise threshold. As needed, this process shall be repeated and refined until noise level compliance is demonstrated and documented. A report of this implemented

mitigation and its documented success will be provided to the City Planner (or other authorized party, as directed by the City of Long Beach).

b. All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers. Enforcement shall be accomplished by random field inspections by applicant personnel during construction activities, to the satisfaction of the respective municipality building official or noise control officer.

c. Construction noise reduction methods such as shutting off idling equipment, construction of a temporary noise barrier, maximizing the distance between construction equipment staging areas and adjacent NSLU, and use of electric air compressors and similar power tools, in lieu of fossil-fueled equipment, shall be used where feasible.

d. During construction, stationary construction equipment shall be placed such that emitted noise is directed away from or shielded (i.e., introduce light-of-sight occluding barriers, such as storage trailers) from NSLU.

e. If equipment is being used that can cause hearing damage at adjacent noise receptor locations (distance attenuation shall be taken into account), portable noise barriers shall be installed that are demonstrated to be adequate to reduce noise levels at receptor locations below hearing damage thresholds (i.e., generally over 90 dBA, assuming this exposure for an 8-hour construction day). This may include erection of temporary berms or plywood barriers to create a break in the line-of-sight, or erection of a heavy fabric tent around the noise source.

f. Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow surrounding property owners to contact the job superintendent if necessary. In the event the municipality having jurisdiction receives a complaint, appropriate corrective actions shall be implemented and a report of the action provided to the reporting party. Appropriate corrective actions could include stricter enforcement of construction schedule, re-location of stationary equipment further from adjacent noise-sensitive receptors, reduction in the number of equipment working simultaneously in proximity to the sensitive receptor, erection of temporary noise barriers, or a combination of the above.

MM-NOI-3 Because heating, ventilation, and air conditioning (HVAC) equipment and other mechanical equipment can generate noise that could affect surrounding NSLU and because the details, specifications, and locations of this equipment is not yet known, the City of Long Beach shall require that future applicants for commercial and industrial developments within the Plan Area retain an acoustical specialist to review development project construction-level plans. The acoustical specialist shall have the responsibility to ensure that the equipment specifications and plans for HVAC and other outdoor mechanical equipment incorporate measures, such as the specification of quieter equipment or provision of acoustical enclosures, that will avoid exceeding relevant noise standards at nearby noise-sensitive land uses (e.g., residential). Prior to the commencement of construction for future commercial and industrial developments, the acoustical specialist shall certify in writing to the City of Long Beach that the equipment specifications and plans incorporate measures that will achieve the relevant noise limits.

MM-NOI-4 Because the details, specifications, and locations of commercial development potentially involving outdoor use areas within the Proposed Project Community Commercial (CC) district is not yet known, the City of Long Beach shall require that future applicants for commercial and industrial developments within these areas of the Proposed Project to retain an acoustical specialist to review development project construction-level plans. The acoustical specialist shall have the responsibility to ensure that the design, location, and orientation (e.g., facing with respect to Long Beach Airport operations) of outdoor use areas will not expose facility occupant and visitors to Long Beach Airport operations noise levels greater than 65 dBA CNEL. Prior to the approval of discretionary entitlements for future commercial and industrial developments, the acoustical specialist shall certify in writing to the City of Long Beach that the specifications and plans incorporate measures that will achieve this exterior noise limit for these outdoor use areas.

MM-NOI-5 Because the details, specifications, and locations of commercial development potentially involving nonresidential indoor occupied spaces within the Proposed Project Community Commercial (CC) district is not yet known, the City of Long Beach shall require that future applicants for commercial and industrial developments within these areas of the Proposed Project retain an acoustical specialist to review development project construction-level plans. The acoustical specialist shall have the responsibility to ensure that the design and materials of sound insulating assemblies (i.e., the composite of walls, doors, fenestration, etc.) will be sufficient to yield interior background sound levels attributed to exterior-to-interior noise intrusion to no more than 50 dBA hourly L_{eq}. Prior to the approval of discretionary entitlements for future commercial and industrial developments, the

acoustical specialist shall certify in writing to the City of Long Beach that the specifications and plans incorporate measures that will achieve this interior background noise limit for these occupied indoor use areas.

3.8.7 Significance After Mitigation

Upon implementation of mitigation measures **MM-NOI-1** through **MM-NOI-5**, the anticipated noise impacts of the Proposed Project would be considered **less than significant**.

3.8.8 References

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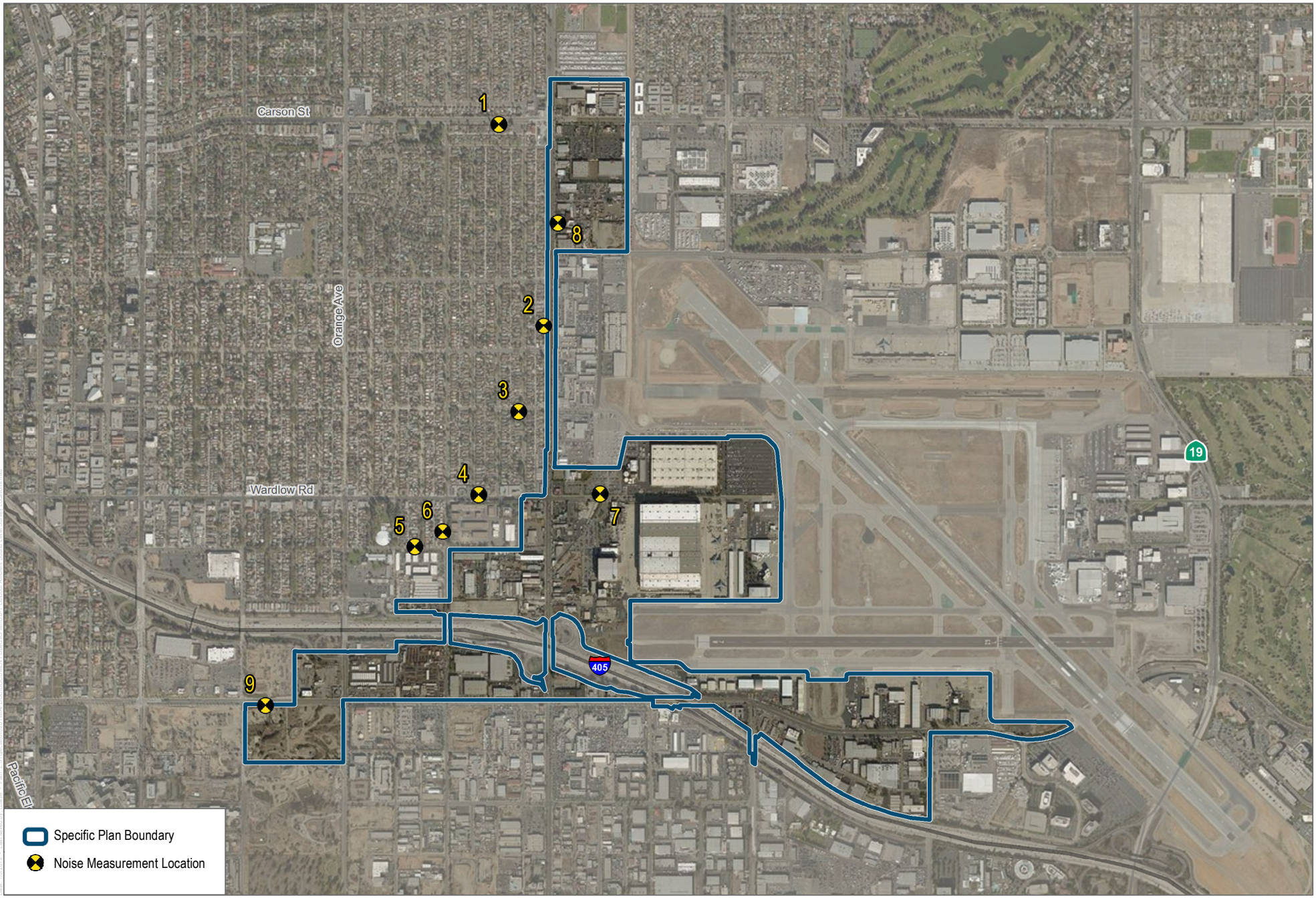

SOURCE: Bing 2018

DUDEK

0 1,000 2,000 Feet

FIGURE 3.8-1

Outdoor Ambient Sound Level Survey Locations

Globemaster Specific Plan

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3.9 POPULATION AND HOUSING

This section describes the existing population and housing setting related to the Globemaster Corridor Specific Plan (GCSP; Proposed Project) site and vicinity, identifies associated regulatory requirements, and analyzes the Proposed Project's impacts to population and housing. The following discussion focuses on the existing population and housing of the City of Long Beach (City) and more specifically, the Plan Area.

The Initial Study (IS) and Notice of Preparation (NOP) are contained in Appendix A-1, Initial Study; and Appendix A-2, Notice of Preparation, respectively. Comments regarding population and housing, received by SCAG in response to the NOP (see Appendix A-3, Notice of Preparation Comment Letters), specifically related to consistency with goals and policies in the Southern California Association of Governments (SCAG) 2016 Regional Transportation Plan/Sustainable Communities Strategies (RTP/SCS), and have been considered in the preparation of the analyses presented in this section. For a complete consistency analysis with SCAG's 2016 RTP/SCS, see Section 3.7, Land Use and Planning, of this Draft Program Environmental Impact Report (PEIR)/Draft Program Environmental Impact Statement (PEIS).

The IS found that the Proposed Project would have no impact as it relates to displacing substantial numbers of existing housing, or substantial numbers of people (Appendix A-1). As such, these impacts will not be addressed further in this Draft PEIR/PEIS.

3.9.1 Existing Conditions

Population, Housing, and Employment

Currently, the City of Long Beach is the seventh largest city in the State of California. According to the population estimates by the California Department of Finance (DOF) Demographic Research Unit, the Estimated 2015 population for the City of Long Beach, and County of Los Angeles as a whole, were 472,779 and 10,136,559 persons, respectively (SCAG 2018). As identified in Tables 3.9-1 and 3.9-2, recent growth trends projected by SCAG suggest that population, housing, and employment in both the City and the County will increase through 2040 (City of Long Beach 2017).

Table 3.9-1
Population, Housing, and Employment Forecasts for the City of Long Beach

	2012	2040	Change 2012-2040	% Change 2012-2040	# of Years	Percentage of Change/Year
Total Population	**466,300**	**484,500**	**18,200**	**3.7%**	**28**	**0.14%**
Total Households	**163,800**	**175,500**	**11,700**	**7.14%**	**28**	**0.26%**
Total Employment	**153,200**	**181,700**	**28,500**	**18.6%**	**28**	**0.66%**

Source: City of Long Beach 2017; SCAG 2018 SCAG's regional growth forecast utilizes "households," not housing units. As defined by the U.S. Cenus Bureau, "households" are equivalent to "occupied dwelling units"

Table 3.9-2
Population, Housing, and Employment Forecasts for the County of Los Angeles

	2012	2040	Change 2012-2040	% Change 2012-2040	# of Years	Percentage of Change/Year
Total Population	9,923,000	11,514,000	1,591,000	16.03%	28	0.57%
Total Households	3,257,000	3,946,000	686,000	21.15%	28	0.76%
Total Employment	4,246,000	5,266,000	980,000	23.08%	28	0.82%

Source: City of Long Beach 2017; SCAG 2018 [1]

These projected increases in population are likely attributed to the net migration of individuals moving into the region due to the recent increase in job availability (City of Long Beach 2017).

Population

As shown above in Tables 3.9-1 and 3.9-2, according to the growth forecast by SCAG and the City, the City's population is anticipated to grow by approximately 4% (approximately 0.1% per year) between 2012 and 2040.[1] Growth of 4% between 2012 and 2040 would be consistent with the 3.5% growth the City experienced between 2012 and 2015. Comparatively, the County is expected to experience a higher increase of approximately 16% (approximately 0.6% per year) between 2012 and 2040 (City of Long Beach 2016).

Households

The GCSP does not include any residential units, land uses, or overlays, and would not allow for mixed-use residential/commercial developments. The project would not contribute to, or reduce the number of housing units within the City. However, the extent to which new jobs created by a project, such as the GCSP, are filled by existing residents is a factor that tends to reduce the growth-related effect of a project. Thus, for purposes of the impact analysis provided in Section 3.9.4, a look at the past and future jobs to housing ratio is provided below.

The "jobs-to-housing ratio" measures the extent to which job opportunities in a given geographic area are sufficient to meet the employment needs of area residents. A sub-area of the region with a jobs-to-housing ratio that is lower than the standard of the region would be considered a "jobs poor" area, indicating that many of the residents must commute to places of employment outside of that sub-area. The projected 2040 jobs-to-housing ratios for the City, subregion (Los Angeles County), and SCAG region are 1.04, 1.32, and 1.33, respectively (Table 3.9-3). As the projected 2040 jobs-to-housing ratio for the City is lower than both the subregional and regional ratio, the City would be "jobs poor," meaning it is projected that more residents will be required to commute outside the City for employment in 2040 (City of Long Beach 2017).

[1] The analysis herein uses the year 2040 as the horizon year, as this is the same year the City of Long Beach expects full buildout of the General Plan.

Table 3.9-3
Projected Future Jobs-to-Housing Ratios

	Employment in 2040	Number of Housing Units in 2040	2040 Jobs-to-Housing Ratio
City of Long Beach	181,700	175,500	1.04
Los Angeles County	5,225,000	3,946,000	1.32
SCAG Region	9,872,000	7,412,000	1.33

Source: City of Long Beach 2017

Employment

According to the U.S. Census Bureau, the top five leading employment industries in the City of Long Beach in 2012 were: 1) Health Care and Social Assistance (approx. 25,500 jobs); 2) Transportation and Warehousing (approx. 20,500 jobs); 3) Accommodations and Food Services (approx. 17,000); 3) Retail Trade (approx. 14,000); 4) Administrative and Support and Waste Management and Remediation Services (approx. 12,000 jobs); and . In 2012, manufacturing only accounted for approx. 8,000 jobs within the City of Long Beach (U.S. Census Bureau 2012).

In 2016 the number one leading employment industry was the same as 2012 with approximately 29,500 jobs. However, manufacturing jumped to the second leading employment industry with approx. 23,000 jobs in 2016 (American Fact Finder 2016).

According to SCAG's growth forecasts, the percentage of residents employed in the City is anticipated to increase by approximately 18.6% between 2012 and 2040 (approximately 0.66% a year). As of January 2016, the City had a labor force of 283,000 people with approximately 15,500 unemployed (City of Long Beach 2017).

C-17 Site Closure

In September 2013, the Department of Defense notified Boeing, manufacturer of the C-17 Globemaster military aircraft, that it would no longer place future orders for the C-17. In April 2014, Boeing announced it would close C-17 production plants by mid-2015 due primarily to the termination of Department of Defense contracts, which represented the single largest demand for the aircraft. Boeing closed the C-17 Site in December 2015. At its peak, the C-17 Site employed up to 5,000 people; however, since 2010, Boeing has steadily downsized the C-17 workforce in anticipation of the closure.

A study conducted by Economic Modeling Specialists International (EMSI) anticipated that the closure of the C-17 Site would result in an overall loss of nearly 5,000 jobs. This includes the elimination of approximately 1,158 Boeing jobs at the C-17 production site, plus an estimated 3,781 jobs in the related supply chain. EMSI's analysis shows that for every laid-off Boeing employee, 2.68 jobs in other industries will also disappear (a job multiplier of 3.68). The EMSI study also

estimated that the closure would result in a $417 million reduction in regional earnings, $190 million of which stem from the jobs removed at the facility. Aside from manufacturing, engineering, and project management jobs within the aerospace/defense sector, other job losses are anticipated to occur in the service realm, including health care; retail trade; professional, scientific, and technical services; accommodation and food services; and administrative support services.

3.9.2 Regulatory Setting

Federal

There are no federal laws or regulations related to housing that are applicable to the Proposed Project.

State

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is a regional council consisting of the following six counties: Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. In total, the SCAG region encompasses 191 cities and over 38,000 square miles within Southern California. SCAG is the Metropolitan Planning Organization (MPO) serving the region under federal law, and serves as the Joint Powers Authority, the Regional Transportation Planning Agency, and the Council of Governments under State law.

On April 7, 2016, the Southern California Association of Governments' Regional Council adopted the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS). The 2016 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The 2016 RTP/SCS charts a course for closely integrating land use and transportation so that the region can grow smartly and sustainably. It outlines more than $556.5 billion in transportation system investments through 2040. The 2016 RTP/SCS integrates planning for how land is used with planning for how people get around to achieve a thoughtfully planned, maturing region where people benefit from increased mobility, more active lifestyles, increased economic opportunity, and an overall higher quality of life.

Similar to the objectives of the GCSP, the 2016 RTP/SCS's land use strategies strive to accommodate new growth within existing urbanized areas, underutilized urban areas, and existing suburban town centers. These areas have the potential to accommodate growth by integrating land use development patterns with transportation improvements that improve accessibility, increase mobility, and encourage the use of active transportation.

California Planning and Zoning Law

The legal framework within which California counties and cities exercise local planning and land use functions is provided in the California Planning and Zoning Law (Sections 65000 through 66499.58 of the California Government Code). Under that law, each county and city must adopt a comprehensive, long-term general plan. The law gives counties and cities wide latitude in how a jurisdiction may create a general plan, but there are fundamental requirements that must be met. The requirements include seven mandatory elements described in the Government Code. Each element must contain text and descriptions setting forth objectives, principles, standards, policies, and plan proposals; diagrams and maps that incorporate data and analysis; and implementation measures.

Once the general plan of a county or city is adopted, it should be construed as a dynamic document, for which adaptability is a key component. Each jurisdiction frequently reviews its general plan for consistency and to ensure it addresses growth-related issues in a comprehensive manner. State law allows up to four general plan amendments per general plan element per year, so each jurisdiction can make changes as justified.

California Government Code section 65450, et seq.

California Government Code sections 65450 through 65457 governs the content and consistency of specific plans with the adopted general plan of the jurisdiction within which it is located. Specific plans shall include text and a diagram(s) which include the following: (a) the distribution, location, and extent of the uses of land, including open space, within the area covered by the plan; (b) the proposed distribution, location, and extent and intensity of major components of public and private transportation, sewage, water, drainage, solid waste disposal, energy, and other essential facilities proposed to be located within the area covered by the plan and needed to support the land uses described in the plan; (c) standards and criteria by which development will proceed, and standards for the conservation, development, and utilization of natural resources, where applicable; and (d) a program of implementation measures including regulations, programs, public works projects, and financing measures necessary to carry out the above mentioned program. In addition, a specific plan shall include a statement of the relationship of the specific plan to the general plan.

Local

City of Long Beach General Plan

State law mandates that local governments adequately plan to meet the existing and projected housing needs of all economic segments of the community as discussed above. Housing policy in the state rests largely upon the effective implementation of local general plans and, in particular, local housing elements. The City of Long Beach's General Plan 2013-2021 Housing Element

identifies policies, programs and objectives that focus on the following issues: 1) conserving and improving existing affordable housing; 2) providing adequate sites for new housing; 3) assisting in the development of affordable housing; 4) removing governmental constraints to housing development; and 5) promoting equal housing opportunities for Long Beach's population. The Housing Element includes analysis of the City's demographic, household and housing characteristics; market, governmental, and environmental constraints; and an evaluation of land, financial, and administrative resources.

City of Long Beach Zoning Regulations

The Zoning Regulations implement the General Plan by regulating the distribution and intensity of land uses and development in such categories as residential, commercial, and industrial. Within each zoning district, the Zoning Regulations establish standards for minimum lot size; building height and setback limits; fence heights; parking; and other development parameters within each land use. Some areas of the city are "zoned" as special districts, called Specific Plan Districts. A Specific Plan is a comprehensive planning and zoning document that is specifically enabled in state planning and zoning law. A Specific Plan provides a means to establish more specific land use regulations and design standards for properties and areas requiring special attention or treatment. A Specific Plan serves as a policy and regulatory document, with policy direction and project development concepts consistent with the General Plan.

3.9.3 Thresholds of Significance

The following significance criteria are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.), and will be used to determine the significance of potential population and housing impacts. Impacts would be significant if the Proposed Project would:

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 of other infrastructure)

The IS found that the Proposed Project would have no impact as it relates to displacing substantial numbers of existing housing, or substantial numbers of people (Appendix A-1). As such, these impacts will not be addressed further in this Draft PEIR/PEIS.

3.9.4 Impacts Analysis

a) Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) of indirectly (for example, through extension of roads of other infrastructure)?

Population growth, in and of itself, does not constitute a physical impact on the environment. However, population growth is relevant in that it may generate secondary environmental impacts as defined under the CEQA, such as increased demands for public services, surpassing of infrastructure capacities, or increased traffic congestion and resulting air pollutant emissions. These indirect environmental effects related to population growth are addressed in the applicable sections of this Draft PEIR/PEIS.

The GCSP does not include any zoning for residential land uses that could directly induce population growth. The Plan Area is highly urbanized, already built out, and has the infrastructure to support new commercial and industrial development as would likely be built under the GCSP. While the GCSP does not include plans for residentially zoned areas, which could directly induce population growth, the GCSP does have the potential to induce growth through the increase in the number of jobs available within the Plan Area. While the GCSP could increase the number of jobs available relative to the number of jobs that are currently available, increase in employment during construction and operation are not expected to cause a significant number of people to move into the City from areas outside the City.

The following analysis addresses the different geographic areas of the GCSP (Central Core, Northern, Southern, and Southeastern Areas) to determine if the zoning and development regulations under the GCSP would significantly change or increase the amount of development that was planned for in the City's General Plan, and regional growth projections, thus leading to potential population growth.

Central Core – Industrial

The Central Core of the Plan Area would primarily be designated as Business Park (BP), however, it also includes General Industrial (IG), Community Commercial (CC), Industrial Commercial (CC), and Airport (AP) districts, as well as the Cherry Avenue Corridor Overlay. According to the City's Zoning Map, existing zoning in the Central Core area includes General Industrial (IG) and PD-19 which includes industrial (light and heavy) uses, Office/Professional, Wholesale Storage, and Airport Facilities. This portion of the Plan Area also includes the former C-17 Site, which is envisioned to be a campus-style environment that supports a range of employment uses, including office, research and development, light industrial, warehousing/distribution, and aviation-related uses. The

2019 General Plan Land Use Element classified portions of this area as the Industrial, Regional-Serving Facility, and Neo-Industrial, Community Commercial Place Types. Thus, future zoning and development regulations, as proposed under the GCSP for the Central Core Plan Area would be consistent with what was planned for and envisioned in the City's 2019 General Plan Land Use Element.

Northern Area – Auto-Oriented Commercial

The Northern Area of the GCSP would be designated as Community Commercial (CC), Industrial Commercial (IC), and Airport (AP) districts with Aviation-Related Use Overlays. The Northern Area is envisioned to be an auto-oriented commercial area, which is consistent with the existing environment, which includes auto-service shops, car dealerships, and strip commercial centers. According to the City's Zoning Map, existing zoning in the Northern Area include Commercial and Light Industrial (IL). The 2019 General Plan Land Use Element classified portions of this area as the Community Commercial PlaceType. Thus, future zoning and development regulations as proposed under the GCSP for the Northern Area would be generally consistent with what was planned for and envisioned in the City's 2019 General Plan Land Uses Element.

Southern Area – Commercial/Industrial

The Southern Area of the GCSP would be designated as General Industrial (IG) and Open Space (OS) districts. The area along Cherry Avenue designated as General Industrial also includes the Cherry Avenue Corridor Overlay. According to the City's Zoning Map, existing zoning in the Southern Area include Commercial, General Industrial, Medium Industrial, Public Right-of-Way, and Park. This portion of the Plan Area includes large-scale industrial operations and warehouses west of Cherry Avenue, as well as, an open space (Willow Springs Park) area designated to preserve an area at the southeast corner of Spring Street and California Avenue. The 2019 General Plan Land Use Element classified portions of this area as the Industrial, Neo-Industrial, Community Commercial, and Open Space PlaceTypes. Future zoning and development regulations as proposed under the GCSP for the Southern Area would be consistent with what was planned for and envisioned in the City's 2019 General Plan Land Use Element.

Southeastern Area – Industrial

The Southeastern Area of the GCSP would be designated as Business Park (BP), Industrial Commercial (IC), General Industrial (IG), Airport (AP) districts, and Airport Environs Overlay Zone (AEOZ). The area designated with the Airport (AP) district in this portionof the Plan Area is airport-owned land comprised of FBOs, including the Pilot Shop, Long Beach Flying Club, and a Flight School. The remaining portions of this area currently

consist of warehouse uses and construction. According to the City's Zoning Maps, existing zoning in the Southeastern Area include General Industrial, Light Industrial, and Planned Development (PD-13). The 2019 General Plan Land Use Element classified portions of this area as the Industrial and Regional-Serving Facility PlaceTypes. Future zoning and development regulations as proposed under the GCSP for the Southeastern Area would be consistent with what was planned for and envisioned in the City's 2019 General Plan Land Use Element.

Therefore, similar to the other areas described above, the GCSP would not substantially alter existing land uses, rather it would place zoning districts over areas with similar built environments and provide a set of development regulations to guide future development in those districts. Although the types of land uses would be similar under the GCSP, the development regulations would improve overall design, create pedestrian facilities, and incorporate transportation elements to improve the overall accessibility, walkability, and visual appeal.

Conclusion

The extent to which new jobs created by a project are filled by existing residents is a factor that tends to reduce the growth-related effect of a project. While the GCSP is a planning document and does not include any physical improvements or projects at this time, future development facilitated by project approval would create a number of temporary, construction related jobs, as well as permanent jobs associated with the new developments. As indicated in Table 3.9-3, the City of Long Beach is expected to have a jobs-to-housing ratio of 1.04 by 2040, which is lower than Los Angeles County and the SCAG region by 0.28 and 0.27, respectively (City of Long Beach 2017, see Table 3.9-3). This means that the City is considered to be "jobs poor," indicating that many of the residents must commute to places of employment outside of the City. While it is uncertain where future places of residence would be for employees working within the Plan Area due to the City's projected jobs-to-housing ratio (1.04 by 2040), it is reasonable to assume that a large percentage of these jobs would be filled by persons already living within the City. Therefore, a substantial increase in population as a result of future employment opportunities potentially facilitated by the GCSP is not anticipated.

In addition, due to the significant job loss that resulted in the area from closure of the C-17 Site, which is evident by the number of manufacturing jobs lost from 2010 to 2016, the new jobs created by the GCSP would likely be replacing those that were lost in the area due to closure of the C-17 site. A principal goal of the GCSP is to stimulate economic growth and attract businesses that replenish high-quality jobs lost from the closure of the former Boeing C-17 manufacturing plant.

As noted in Chapter 2.0, Project Description, of this Draft PEIR/PEIS, a 2018 market study indicated that warehouse and distribution uses were identified as the highest demand industrial sector over at least the next ten years. The job projections for the GCSP 2040 horizon year are shown in Table 4, Job Growth Projections, 2018-2045 and Beyond. As of 2020, there are an estimated 3,700 existing jobs in the Plan Area. Ultimately, more than 1,200 of these jobs are planned to be replaced by new development and new jobs. During the 2020-2040 period, it is projected that more than 700 of these would be replaced, leaving about 3,000 existing jobs on site in 2040. Combined with the growth, the total job count in the Plan Area in 2040 is estimated to be 7,880.

For comparison, SCAG projects the City of Long Beach as a whole to add 15,900 jobs during this period (2016 RTP). Accounting for the loss of some existing jobs as discussed below, the Plan Area would account for about one third of total citywide net job growth. Other areas of the City are largely built-out and redevelopment would not facilitate achievement of the projected job creation envisioned in the 2016 SCAG RTP/SCS. Additionally, as shown on Table 3.9-1, the City would experience an increase in 28,500 jobs from 2012 to 2040. Thus, the Project's estimated 7,880 additional jobs would be consistent with SCAG's employment forecasts for the City. Implementation of the GCSP would provide a planning framework for development of uses with an established employment density. This would represent a shift of jobs to the Plan Area, but would not exceed the overall projections for jobs in the City of Long Beach in the 2040 horizon year.

CEQA Impact Determination

Although the GCSP would allow for new employment opportunities in the City of Long Beach through the year 2040, it would be consistent with SCAG's regional growth forecasts for employment in the same horizon year (Table 3.9-1 and 3.9-2). The City would experience an increase in 28,500 jobs from 2012 to 2040. Thus, the Project's estimated 7,880 additional jobs would be consistent with SCAG's employment forecasts for the City. Therefore, the Proposed Project would not foster growth in excess of what was assumed in projections made by regional planning agencies (e.g., SCAG). Implementation of the GCSP would not result in direct or indirect substantial population growth and impacts would be **less than significant** under CEQA. No mitigation is required.

NEPA Impact Determination

Although the GCSP would allow for new employment opportunities in the City of Long Beach through the year 2040, it would be consistent with SCAG's regional growth forecasts for employment in the same horizon year (Table 3.9-1 and 3.9-2). Therefore, the Proposed Project would not foster growth in excess of what was assumed in projections

made by regional planning agencies (e.g., SCAG). Implementation of the GCSP would not result in direct or indirect substantial population growth and there would be **no adverse effect** under NEPA.

3.9.5 Cumulative Impacts

As defined in the State CEQA Guidelines, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for population, housing, and employment. The cumulative study area used to assess potential cumulative population and housing impacts includes the City of Long Beach and the County of Los Angeles because employees of the GCSP may live within or outside the City's jurisdictional boundaries.

As shown in Tables 3.9-1 and 3.9-2, the City's population and employment numbers are anticipated to increase by 18,200 and 28,500 respectively by 2040, and the County's employment numbers are anticipated to increase by 980,000 by 2040. Therefore, while the GCSP would allow for 7,880 new employment opportunities in the City of Long Beach through the year 2040, it would be consistent with SCAG's regional growth forecasts for population and employment in the same horizon year.

As stated in the impact analysis above, the proposed GCSP would not significantly change, alter, or increase the amount of development compared to what currently exists within the Plan Area or what was assumed in local and regional planning documents. Therefore, future zoning and development regulations as proposed under the GCSP for the Southern Area would be consistent with what was planned for and envisioned in the City's General Plan.

While it is uncertain where future places of residence would be for employees working within the Plan Area, due to the City's projected "poor" jobs-to-housing ratio (1.04 by 2040), it is reasonable to assume that a large percentage of these jobs would be filled by persons already living within the City. Therefore, a substantial increase in population as a result of future employment opportunities potentially facilitated by the GCSP is not anticipated.

The proposed GCSP would allow for future development and redevelopment since the Plan Area is primarily built out, within designated zoning districts and according to the specified development regulations. The different zoning districts under the GCSP include Business Park (BP), Industrial Commercial (IC), General Industrial (IG), Community Commercial (CC), Open Space (OS), Airport (AP), Runway Safety Zone Overlay, and Cherry Avenue Corridor Overlay. These zoning districts would provide for a diversified economic base and increased employment opportunities for the City and its current and future residences. The Proposed Project would help meet the cumulative demand of employment that will result from the City's projected future population. Therefore, since the project would not induce substantial population growth, a

cumulatively considerable effect would not result when combined with population growth caused by other projects within the City or County. Effects of substantial population growth when combined with other future projects would **not be cumulatively considerable**.

3.9.6 Mitigation Measures

Potential impacts associated with growth inducement are considered **less than significant** and no mitigation is required.

3.9.7 Significance After Mitigation

As indicated in the impact analysis above, impacts associated with the GCSP and the potential for induced population growth would be **less than significant**.

3.9.8 References

City of Long Beach. 2017. Program EIR for the Land Use and Urban Design Element.

City of Long Beach. 2019. General Plan. Land Use Element. December 2019. http://www.longbeach.gov/globalassets/lbds/media-library/documents/planning/advance/lueude/land-use-element-final-adopted-december-2019.

City of Long Beach 2013-2021 Housing Element. http://www.lbds.info/civica/filebank/blobdload.asp?BlobID=4185

SCAG 2018. California Department of Finance. Report E-1 Population Estimates for Cities, Counties, and the State. Website: http://www.dof.ca.gov/research/demographic/reports/estimates/e-1/view.php

3.10 PUBLIC SERVICES

This section describes the existing setting of the Plan Area and vicinity with regards to public services, identifies associated regulatory requirements for public services, and evaluates potential impacts related to implementation of the Globemaster Corridor Specific Plan (GCSP; Proposed Project).

The Initial Study (IS) and Notice of Preparation (NOP) are contained in Appendix A-1, Initial Study; and Appendix A-2, Notice of Preparation, respectively. No comments regarding public services were received during the scoping process (see Appendix A-3, Notice of Preparation Comment Letters).

The IS found that the Proposed Project would have a less than significant impact on public services as it relates to schools and parks (Appendix A-1). As such, these impacts will not be addressed further in this Draft Program Environmental Impact Report (PEIR)/Draft Program Environmental Impact Statement (PEIS).

3.10.1 Existing Conditions

Fire Protection

The Long Beach Fire Department (LBFD) is the primary authority in the City responsible for providing fire protection, medical, rescue, disaster response, public safety education, community service, and environmental emergency services. The LBFD is divided into the bureaus of Operations, Fire Prevention, Support Services, and Administration. Each bureau is further divided into sections that report to the Fire Chief. The LBFD has a total of 534 full time equivalent (FTE) uniformed and nonuniformed personnel (LBFD 2019). The LBFD currently protects over 467,354 residents from its 23 fire stations located throughout the City (including two fire boat stations in the Port of Long Beach, one urban search and rescue service station, one hazardous materials station, and one airport station), nine lifeguard facilities (41 seasonal stations), a training center, and the LBFD headquarters (USCB 2018) (Gruneisen, M. 2019).

According to the City's Adopted Budget for Fiscal Year (FY) 2019, it is the stated goal of the LBFD to respond to structure fire calls within 6 minutes and 20 seconds or less (City of Long Beach 2019a). Response time is impacted by many factors, including increasing call volume and station location. Approximately 85 percent of the LBFD emergency responses are medical in nature. The LBFD goals for emergency response are to respond to 90 percent of emergency calls within 5 minutes or less. Currently, the average Citywide response time from dispatch to arrival is 5.5 minutes (City of Long Beach 2019a).

The four closest LBFD fire stations to the Plan Area are Station No. 16 at 2890 East Wardlow Road, located within the Plan Area; Station No. 17 at 2241 Argonne Avenue, approximately 1.4 miles to the southeast; and Station No. 19 at 3559 Clark Avenue, approximately 2.4 miles to the east (see Figure 3.10-1, Fire and Police Services Serving the Project Site). The locations and shortest driving distances to these LBFD fire stations are described in Table 3.10-1.

Table 3.10-1
Nearest Fire Station Information

Station	Location	Distance to Plan Area[1]
Station No. 16	2890 East Wardlow Road	Within Plan Area
Station No. 9 *(out of service)*	3917 Long Beach Boulevard	1.4 miles southeast
Station No. 17	2241 Argonne Avenue	1.4 miles west
Station No. 19	3559 Clark Avenue	2.4 miles east

Source: City of Long Beach 2020a.
1 Driving distance to nearest part of Plan Area boundary

Additionally, Station No. 9 is located at 3917 Long Beach Boulevard, approximately 1.4 miles to the west. However, LBFD staff assigned to Station No. 9 have been temporarily relocated to Fire Stations 13 and 16 due to the reoccurrence of toxic mold in the building, which is the result of significant site and facility deficiencies that cannot be remediated. Currently, LBFD is evaluating options to relocate Station No. 9. In the interim, LBFD is planning to demolish the existing building and to install a temporary/modular structure that would operate on-site for approximately five years while the permanent replacement structure is planned and constructed at a to-be-determined off-site location that is expected to be proximate to Station No. 9's existing location (and outside, but proximate to, the Plan Area) (City of Long Beach 2020b). Since the closure of Station No. 9, LBFD staff has indicated that its emergency response apparatus continues to work well and has not reported response times of concern (City of Long Beach 2020b).

While LBFD is currently maintaining adequate response times (Gruneisen, M. 2019), LBFD has identified the need to improve fire protection services and decrease response times (City of Long Beach 2020b). Accordingly, LBFD is currently exploring funding sources to build, relocate or consolidate fire facilities. Plans for these efforts are developed through LBFD's long-term strategic plans and as identified in the City's annual budget. LBFD receives funding from the following four sources: (1) the City's General Fund (76 percent), (2) Certified Uniform Program Agency (1 percent), (3) the Tidelands Operations Fund (22 percent), and (4) the Police and Fire Public Safety Oil Production Act (Proposition H) (1 percent) (City of Long Beach 2019a). The City's FY 2019 adopted budget for LBFD was $126,877,832, which for LBFD represents about 4.1 percent of the total budget for all departments ($3.038 billion).

Police Protection

The Long Beach Police Department (LBPD) provides local police protection services to the City of Long Beach. The LBPD consists of five separate bureaus: (1) the Investigations Bureau, (2) the Support Bureau, (3) the Patrol Bureau, (4) the Administration Bureau, and (5) the Financial Bureau. (City of Long Beach 2019a). The Investigations Bureau consists of the Detective Division, the Special Investigations Division, and the Forensic Science Services Division. This Investigation Bureau is responsible for investigating crimes, analyzing evidence, apprehending suspects, preventing abuse, and promoting positive relationships between police officers and youth. The Support Bureau consists of the Security Services, Training, the Port Police, and the Jail Divisions. This Support Bureau is responsible for providing specialized security functions, providing enhanced emergency communication services, developing police recruits, and training police officers. The Patrol Bureau is the largest bureau as it encompasses over 40 percent of the LBPD budget and more than half of its personnel. This Patrol Bureau is responsible for providing community policing services. The Administrative Bureau consists of the Community Engagement, Personnel, and Records and Technology Divisions. This Administrative Bureau is responsible for providing personnel and payroll services; and managing department records, fleet vehicles, and technological activities. The Financial Bureau consists of the Fiscal Division, responsible for processing payments and billings, and preparing the annual budget.

The Plan Area is located within the LBPD's North and East Patrol Divisions (City of Long Beach 2017a). More specifically, the Plan Area is part of the North Patrol Division Beat[1] 20 and the East Patrol Division Beat 14. The North Patrol Division substation is located at 1835 Santa Fe Avenue, approximately 1.95 miles northwest of the Plan Area, and the East Patrol Division substation is located at 3800 East Willow Street, approximately 0.5 mile south of the Plan Area (see Figure 3.10-1, Fire and Police Services Serving the Project Site). Both substations operate 24 hours a day and seven days a week with minimal on-site staffing. The locations and shortest driving distances to the two LBPD police stations are described in Table 3.10-2.

Table 3.10-2
Nearest Police Substation Information

Station	Location	Distance to Plan Area[1]
East Patrol Division Substation	3800 East Willow Street	1.95 miles northwest
North Patrol Division Substation	4891 Atlantic Avenue	0.5 mile southeast

Source: City of Long Beach 2018.
1 Driving distance to nearest part of Plan Area boundary

LBPD strives to respond to Priority 1 Calls for Service (crime in progress/life-threatening situations) in 5 minutes or less, on average. Priority 2 Calls are non-emergency calls for crimes

1 In police terminology, a beat is the territory and time that a police officer patrols.

that have been committed with possible evidence available. The LBPD goal is to respond to Priority 2 Calls for service in 20 minutes or less, on average. Priority 3 calls are generally related to crimes with no evidence potential, but are required or desire to take a report of a crime. The LBPD goal is to respond to Priority 3 calls for service in 30 minutes or less, on average (City of Long Beach 2019a). As such, Priority 1 Calls receive LBPD's fastest response time. The LBPD states that existing resources, including personnel, equipment, and facilities, are able to adequately serve the City under current conditions (Carver, B. 2019).

The LBPD is also a part of the Los Angeles County Law Enforcement Mutual Aid Organization, which is overseen by the Los Angeles County Sheriff's Department. In the event that mutual aid is required, the Emergency Operations Bureau of the Los Angeles County Sheriff's Department is notified and, in turn, notification of other cities in predetermined response groups would occur (City of Long Beach 2015).

The LBPD receives funding from the following four sources: (1) the City's General Fund (92 percent), (2) General Grants (2 percent), (3) the Tidelands Operations Fund (5 percent), and (4) the Police and Fire Public Safety Oil Production Act (Proposition H) (1 percent). The City's FY 2019 adopted budget for the LBPD was $258,957,589, which for LBPD represents about 8.5 percent of the total budget for all departments ($3.038 billion).

Other Public Facilities

Public Libraries. The Long Beach Public Library (LBPL) system provides library services to the City and includes 12 branch locations throughout the City (LBPL 2020a). The LBPL system provides access to library resources and services by implementing innovative service models at all libraries – including the recently constructed Main Library, providing educational enrichment programs, pursuing and maintaining community partnerships that strengthen library services, implementing enhanced library technology, and ensuring that libraries are a safe place to learn, explore and create.

The LBPL system's primary goal is to be public education institution and an active partner in learning for a lifetime within the Long Beach community, as codified in the 2017-2020 Strategic Plan. Per the LBPL system's 2017-2020 Strategic Plan (LBPL 2017), the system has the following additional goals:

- Position the library as a public education institution, in which LBPL is an active partner in learning for a lifetime within the Long Beach community;
- Support youth development by connecting children, parents, and caregivers to tools, resources, and services provided by the library and its partners;
- Serve the diverse needs of the community by collecting feedback and listening to our customers;

- Tell our story to demonstrate the value of the Long Beach Public Library to our community;
- Improve staff communication, support all levels of staff, and focus on developing bright and driven teams.

Over the previous years, LBPL has taken transformative strides to improve its position as a public education system in the community. In 2019, the LBPL system opened its flagship library, the Long Beach Main Library located in the southern portion of the City at 200 W. Broadway, in the Civic Center. In total, the LBPL system has approximately 195,965 square feet (sf) of library facilities, approximately 800,000 library materials (includes hardcopies and online resources), and approximately 300 computers available for public use (Ahlo, A. 2019). In FY 2019, the City's Library Services employed 128.09 FTE personnel (City of Long Beach 2019a). Table 3.10-3, LBPL Statistics, details specific information such as library size, population served, and specific collection items for each library within the LBPL system.

Table 3.10-3
LBPL Statistics

Library	Year Built	Council District	Schools Served	Hours Open per Week	Annual Checkouts	Reference Questions Answered Annually	No. of Volumes	Square Feet
Main	2019	2	6	34	121,376	85,201	279,436	93,000
Alamitos	1929	2	3	34	39,988	7,885	32,377	7,475
Bach	1958	5	16	34	79,684	15,450	45,539	7,000
Bay Shore	1959	3	4	38	71,396	44,565	44,231	6,900
Brewitt	1948	4	8	34	51,390	22,890	35,339	5,225
Burnett	1969	6	9	38	40,276	35,060	39,972	7,500
Dana	1958	7	8	34	77,398	13,423	41,844	6,800
El Dorado	1970	5	11	38	135,611	22,355	60,687	8,160
Harte	1957	7	9	34	38,238	12,610	40,977	6,500
Los Altos	1957	4	11	34	84,452	17,145	42,242	6,750
Mark Twain	2007	6	5	34	73,890	31,060	67,554	16,000
Obama	2016	9	17	38	133,204	130,775	62,013	24,655

Source: Ahlo, A. 2019.

Libraries in the LBPL system are closed on Mondays and are open from 12:00 p.m. to 7:00 p.m. on Tuesdays, from 12:00 p.m. to 6:00 p.m. on Wednesdays, from 12:00 p.m. to 7:00 p.m. on Thursdays, from 10:00 a.m. to 5:00 p.m. on Fridays and Saturdays, and from 12:00 p.m. to 4:00 p.m. on Sundays (Bay Shore, Burnett, El Dorado and Michelle Obama Libraries only) (LBPL 2020b).

The LBPL receives funding from the following three sources: (1) the City's General Fund (94 percent), (2) General Grants (5 percent), and (3) the Civic Center (1 percent). The City's FY 2019 adopted budget for LBPL was $14,838,826, which for LBPL represents about 0.5 percent of the total budget for all departments ($3.038 billion) (City of Long Beach 2019a).

Demand for library services is typically determined based on the size of the resident population. However, the City does not currently have an adopted threshold that it uses to assess library needs. Rather, the LBPL system focuses on utilizing its resources within its existing facilities. Improvements to LBPL facilities are typically identified during the City's annual budget process as funding permits. Currently, the LBPL system does not have plans to expand library facilities (Ahlo, A. 2019).

3.10.2 Regulatory Setting

Federal

International Fire Code

The International Fire Code (IFC) regulates minimum fire safety requirements for new and existing buildings, facilities, storage, and processes. The IFC includes general and specialized technical fire and life safety regulations addressing fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, use and storage of hazardous materials, protection of emergency responders, industrial processes, and many other topics.

State

Fire Protection

California Fire Code

The California Fire Code is Chapter 9 of Title 24 of the California Code of Regulations. It provides regulations for safeguarding life and property from fire and explosion hazards derived from the storage, handling, and use of hazardous substances, materials, and devices. The provisions of this code apply to construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure or any appurtenance connected or attached to such building structures throughout California.

Uniform Fire Code

The Uniform Fire Code contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the code include fire department access, fire hydrants, automatic storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other

general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The code contains specialized technical regulations related to fire and life safety.

California Health and Safety Code

State fire regulations are set forth in Section 13000 et seq. of the California Health and Safety Code, including regulations for building standards (also set forth in the California Building Code), and fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training. The State Fire Marshal enforces these regulations and building standards in all state-owned buildings, state-occupied buildings, and state institutions throughout California.

California Occupational Safety and Health Administration

In accordance with California Code of Regulations, Title 8, Sections 1270, Fire Prevention, and 6773, Fire Protection and Fire Equipment, the California Occupational Safety and Health Administration has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, guidelines on the handling of highly combustible materials; fire hose size requirements; restrictions on the use of compressed air; requirements for access roads; and guidelines for testing, maintaining, and using all firefighting and emergency medical equipment.

Mutual Aid Agreements

The California Disaster and Civil Defense Master Mutual Aid Agreement, as provided by the California Emergency Services Act, provides statewide mutual aid between and among local jurisdictions and the state. The statewide mutual aid system exists to ensure that adequate resources, facilities, and other supports are provided to jurisdictions whenever resources prove to be inadequate for a given situation. Each jurisdiction controls its own personnel and facilities but can give and receive help whenever needed.

Local

City of Long Beach General Plan

The following public safety goals and recommendations are included in the Public Safety Element of the City General Plan (1975) and are applicable to the Proposed Project as they relate to the police and fire protection required for existing and proposed land uses. The following goals and recommendations are applicable to the Proposed Project.

- **Development Goal 1**. Promote the redevelopment of areas which may present safety problems.
- **Development Goal 2.** Utilize safety considerations as a means of encouraging and enhancing desired land use patterns.

- **Development Goal 5.** Use physical planning as a means of achieving greater degrees of protection from safety hazards.
- **Development Goal 6.** Encourage transportation systems, utilities, industries, and similar uses to locate and operate in a manner consistent with public safety goals.
- **Development Goal 7.** Assure continued safe accessibility to all urban land uses throughout the City.
- **Development Goal 9.** Encourage development that would augment efforts of other safety related Departments of the City (i.e., design for adequate access for firefighting equipment and police surveillance).
- **Development Goal 10**. Strive to encourage urbanizations patterns which preserve and/or create greater safety for residents and visitors.
    - **Protection Goal 1.** Use safety precautions as one means of preventing blight and deterioration.
    - **Protection Goal 10.** Provide the maximum feasible level of public safety protection services.

On December 3, 2019, the Long Beach City Council adopted the Land Use Element and Urban Design Element, which are elements of the City's General Plan. The following proposed Goals, Strategies, and Policies from the 2019 Land Use Element (City of Long Beach 2019b) and 2019 Urban Design Element (City of Long Beach 2019c) are applicable to the analysis of Public Services for the Proposed Project.

Land Use Element.

- **LU Policy 14-1:** Remedy existing deficiencies in blighted and underserved neighborhoods by providing public facilities, amenities, improvements and services equitably throughout the City.
- **LU Policy 17-2:** Maintain adequate and sustainable infrastructure systems to protect the health and safety of all Long Beach residents, businesses, institutions and regional-serving facilities.

Urban Design Element.

- **Strategy No. 7:** Provide safe and secure neighborhoods, streets, buildings, parks, and plazas.
    - **Policy UD 7-1**: Encourage public amenities and spaces in neighborhoods that allow for human contact, social activities, and community involvement to create an "eyes on the street" environment.
    - **Policy UD 16-5:** Incorporate Crime Prevention Through Environmental Design (CPTED) strategies into the design and development of populated areas.

City of Long Beach Municipal Code

The LBMC identifies land use categories, development standards, and other general provisions that ensure consistency between the City's General Plan and proposed development projects. The following provisions from the LBMC focus on fire and police services impacts associated with new development projects and are relevant to the Proposed Project:

- **Chapter 18.22:** Police Facilities Impact Fee. Imposed on any residential and nonresidential development requiring the obtainment of a building permit for the purpose of assuring that impacts created by new development pay its fair share of costs required to support needed police facilities and related costs necessary to accommodate such development. For nonresidential developments, a base fee per square foot is applied to the gross floor area of the proposed buildings.
- **Chapter 18.23:** Fire Facilities Impact Fee. This chapter of the Municipal Code sets forth the fees that area imposed on residential and nonresidential development to ensure that new development pays its fair share of the costs required to support needed fire facilities and related costs necessary to accommodate such development. The funds are to be utilized for payment of the actual or estimated costs of fire facilities, apparatus, and equipment related to new residential and nonresidential construction. For nonresidential developments, a base fee per square foot is applied to the gross floor area of the proposed buildings.
- **Chapter 18.48 (Fire Code).** The Long Beach City Council has adopted and incorporated by reference, as though set forth in full in this chapter of the Municipal Code, the 2013 Edition of the California Fire Code (CFC), excluding sections, chapters or appendices pursuant to Section 18.48.040. The CFC sets forth requirements including emergency access, emergency egress routes, interior and exterior design and materials, fire safety features including sprinklers, and hazardous materials.

Fees are applied at the time a building permit is issued and are due prior to issuance of a Certificate of Occupancy.

City of Long Beach Proposition H

The City approved the Police and Fire Public Safety Oil Production Act, or Proposition H, in May 2007. Proposition H amended the City's Municipal Code to include a special tax on Long Beach oil producers consisting of $0.25 per barrel. The rate is adjusted annually in June based on the consumer price index; as of June 1, 2017, the special tax had increased to 30 cents barrel of oil produced. The proceeds of Proposition H may only be used for police officers, firefighters and related costs, including equipment, facilities and training so that public safety needs are met. The revenue is divided equally between the LBPD and LBFD. During the 2017 fiscal year, the Proposition H tax generated a total of $3,397,985 oil tax revenue. The LBPD

used its portion of the revenue for mainly salaries, worker benefits, and Police Academy costs. Similarly, the LBFD used its portion of the revenue mainly for salaries, worker benefits, and the Fire Academy (LBCA 2018).

3.10.3 Thresholds of Significance

The following significance criteria are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.), and will be used to determine the significance of potential impact to public services. Impacts related to public services would be significant if the Proposed Project would:

1. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:
    - Fire protection
    - Police protection
    - Schools
    - Parks
    - Other public facilities

The IS found that the Proposed Project would have a less than significant impact as it relates to schools and parks, because of the Proposed Project's limited potentially to induce population growth in the area (Appendix A-1). As such, these impacts will not be addressed further in this PEIR/PEIS).

3.10.4 Impacts Analysis

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

Fire Protection

Fire protection services for the Plan Area are currently provided by a number of stations within the City, including Station Nos. 16, 17, 19[2]. Station response and response times are based on several factors, such as neighborhood traffic patterns, geography, station availability, and distance from other nearby stations. As discussed in Section 3.10.1, the LBFD has determined that while emergency response times in the City are adequate (City of Long Beach 2019a) (even with the temporary closure of Station No. 9 (City of Long Beach 2020b)), it has identified the need to improve fire protection services and decrease response times by building, relocating or consolidating fire facilities (Gruneisen, M. 2019).

The Proposed Project does not include any physical improvements, but allows for the future redevelopment of existing uses with non-residential uses. As discussed in Section 3.9, Population and Housing, of this Draft PEIR/PEIS, the Proposed Project would not allow for the development of new residential units that would generate a residential population in the service area of the fire stations serving the Plan Area. However, the non-residential uses that would replace the existing uses have the potential to result in a greater demand for fire protection services given the hours of operation of potential future uses and the daytime and nighttime populations of potential future uses compared to existing uses. In correspondence dated December 5, 2019, LBFD personnel indicated that an increase in occupants (i.e., visitors and workforce) as a result of Project implementation would strain the existing system and adversely affect call volumes, response times, and LBFD resources (Gruneisen, M. 2019). The City's costs to maintain facilities and equipment, as well as train and equip its staff, would also increase. The Proposed Project would also place additional demand on non-emergency services provided by the LBFD, such as inspections, plan checks, and community relation events.

[2] Note that Station No. 9 also typically serves the Plan Area. However, as described in Section 3.1.0, LBFD staff assigned to Station No. 9 have been temporarily relocated to Fire Stations 13 and 16 due significant site and facility deficiencies that cannot be remediated. LBFD is planning to demolish the existing building and to install a temporary/modular structure that would operate on-site for approximately five years while the permanent replacement structure is planned and constructed at a to-be-determined off-site location that is expected to be proximate to Station No. 9's existing location.

When viewed in the context of the existing conditions, the Proposed Project would increase LBFD's existing need to improve fire protection services and decrease response times. However, the costs of additional personnel and materials that would be required to serve development allowed under the Proposed Project would be offset through increased revenues generated by future development, such as property taxes and development impact fees. All future projects implemented under the Proposed Project would be processed by the City's Development Services Department and would be required to comply with all municipal requirements in effect when processing of future development applications is conducted. Prior to the issuance of building permits, future project applicants would be required to pay the adopted fire facilities impact fees. Per Chapter 18.23 (Fire Facilities Impact Fees) of the City's Municipal Code, the LBFD receives funding from Fire Facilities Impact fees, which are charged on all new residential and nonresidential development. These fees are calculated per dwelling unit or square footage, as detailed in Table 3.10-4, Fire Facilities Impact Fees (City of Long Beach 2019d), and are updated on an annual basis.

Table 3.10-4
Fire Facilities Impact Fees (2019)

Land Use Type	Fee
Residential	
Single-family	$496/dwelling unit
Multi-family	$378/dwelling unit
Accessory Dwelling Unit (ADU)	$241.74/dwelling unit
Non-Residential	
Commercial	$0.267/sf
Office	$0.325/sf
Industrial	$0.132/sf

Source: City of Long Beach 2019d.
Note: sf = square feet

The funds obtained from the fire facilities impact fees are required to be used to fund costs of providing additional fire services necessary to accommodate future development. The LBFD would also continue to be supported by Proposition H revenue, a per barrel tax on all oil producers in Long Beach; the City's General Fund; the City's Tidelands operation revenue; and other revenue sources such as paramedic fees, fire building plan and building check fees, various state and federal grants, and private donations. The additional personnel, building, and material costs for fire services in the City required due to increased demand from future development accommodated by the Proposed Project would be offset through these revenue sources. Accordingly, sufficient revenue would be available for necessary improvements to provide for adequate fire facilities, equipment, and personnel.

As the Proposed Project is implemented, these new revenues would assist LBFD in its efforts to maintain appropriate firefighter staffing levels to ensure that it continues to meet its performance measures. Additionally, as part of its long-term strategic planning efforts, LBFD would continue to monitor the factors that would result in the need for new fire protection facilities, and would plan for the provision of any new facilities as part of its capital improvement plan (implemented through the City's annual budget). Should LBFD identify the need to develop new fire protection facilities within the Plan Area, LBFD would be permitted to do so given that fire protection facilities are an allowed use within the Plan Area. While LBFD does not currently have plans for new fire protection facilities within the Plan Area, should LBFD identify the need to develop new fire protection facilities, any potential environmental impacts resulting from development of such facilities will have been incorporated within the impact analysis of this PEIR/PEIS (fire protection facilities are allowable uses within select areas of the Plan area and thus are part of the Proposed Project analyzed herein).

CEQA Determination

The Proposed Project permits development of new fire stations, proposes no physical improvements, and would require all future projects to contribute funding that would enable LBFD to maintain an adequate level fire protection service. Therefore, Project impacts related to fire protection would be **less than significant**. No mitigation is required.

NEPA Determination

The Proposed Project permits development of new fire stations, proposes no physical improvements, and would require all future projects to contribute funding that would enable LBFD to maintain an adequate level fire protection service. Therefore, Project **no adverse effects** would occur under NEPA.

Police Protection

Police protection services for the Plan Area are currently provided by the LBPD's North Patrol Division Beat 20 and the East Patrol Division Beat 14. As discussed above in Section 3.10.1, the LBPD states that existing resources, including personnel, equipment, and facilities, are able to adequately serve the City under current conditions (Carter, B. 2019).

The Proposed Project does not include any physical improvements, but allows for the future redevelopment of existing uses with non-residential uses. As discussed in Section 3.9, Population and Housing, of this Draft PEIR/PEIS, the Proposed Project would not allow for the development of new residential units that would generate a residential population in the service area of the fire stations serving the Plan Area. However, the non-

residential uses that would replace the existing uses have the potential to result in a greater demand for fire protection services given the hours of operation of potential future uses and the daytime and nighttime populations of potential future uses compared to existing uses. In correspondence dated September 10, 2019, LBPD personnel indicated that even with the addition of occupants (i.e., visitors and workforce) as a result of Project implementation, LBPD does not anticipate any substantial increase in demand for staff, facilities, equipment, or police or other emergency services and anticipates being able to provide adequate services to the Proposed Project (Carter, B. 2019).

Regardless of the effect that the Proposed Project would have on LBPD resources, the Proposed Project would also provide a funding mechanism (through increased revenues and fees, such as property taxes, generated by future development) that would assist LBPD in its efforts to maintain appropriate staffing levels to ensure that it continues to meet its performance measures.

All future projects implemented under the Proposed Project would be processed by the City's Development Services Department and would be required to comply with all municipal requirements in effect when processing of future development applications is conducted. Prior to the issuance of building permits, future project applicants would be required to pay the adopted police facilities impact fees. Per Chapter 18.22 (Police Facilities Impact Fees) of the City's Municipal Code, the LBPD receives funding from police facilities impact fees which are charged on all new residential and non-residential development. These fees are calculated per dwelling unit or square footage, as detailed in Table 3.10-5, Police Facilities Impact Fees (2019), and are updated on an annual basis. The funds obtained from the police facilities impact fees are required to be used to fund costs of providing additional police services attributed to new development, including the acquisition, construction, and furnishing of new law enforcement facilities, the purchasing of equipment and vehicles, and the funding of a master plan to identical capital facilities to serve the LBPD. In addition, the LBPD would continue to be supported by Proposition H revenue, a per barrel tax on all oil producers in Long Beach; the City's Tidelands operation revenue; and other revenue sources such as general grants (e.g., federal, State, and County grants). The additional personnel, building, and materials costs for police services in the City required due to increased demand from future development accommodated by the Proposed Project would be offset through these revenue sources.

Table 3.10-5
Police Facilities Impact Fees (2019)

Land Use Type	Fee
Residential	
Single-family	$703/dwelling unit
Multi-family	$537/dwelling unit
ADU	$342.86/dwelling unit
Non-Residential	
Commercial	$0.442/ sf
Office	$0.538/sf
Industrial	$0.218/sf

Source: City of Long Beach 2019d
Note: sf = square feet

By following this process, sufficient revenue would be available for necessary service improvements to provide for adequate police facilities, equipment, and personnel upon buildout of the GCSP. New development over time would increase contributions to the General Fund through tax revenues by which the fund would be expected to grow in rough proportion to any increase in residential dwelling units and/or nonresidential space. Additional police personnel and resources would be provided through the annual budget review process. Annually, the LBPD assesses and allocates its budget to ensure that adequate levels of service are maintained throughout the City. Additional resources and personnel funded by an increase in tax revenue, along with collection of Police Facilities Impact Fees, would assist the LBPD in maintaining adequate levels of service.

While LBPD has indicated it does not anticipate any substantial effects as a result of the Proposed Project and does not currently have plans for new police protection facilities within the Plan Area, should LBPD identify the need to develop new police protection facilities, any potential environmental impacts resulting from development of such facilities will have been incorporated within the impact analysis of this PEIR/PEIS (police protection facilities are allowable uses within select areas of the Plan area and thus are part of the Proposed Project analyzed herein).

CEQA Determination

The Proposed Project permits development of new police stations, proposes no physical improvements, and would require all future projects to contribute funding that would enable LBPD to maintain an adequate level police protection service. Therefore, Project impacts related to fire protection would be **less than significant**. No mitigation is required.

NEPA Determination

The Proposed Project permits development of new police stations, proposes no physical improvements, and would require all future projects to contribute funding that would enable LBPD to maintain an adequate level police protection service. Therefore, **no adverse effects** would occur to fire protection services under NEPA.

Other Public Services (Public Libraries)

As discussed above and in Section 3.11, Population and Housing, of this Draft PEIR/PEIS, the GCSP would not allow for the development of new residential units, which would directly generate population growth within the City. Similarly, while the GCSP would drive economic growth and create new jobs, it is anticipated that the, the new jobs created by the GCSP would likely be replacing those that were lost in the area due to closure of the C-17 site. As such, Section 3.11 concludes that the GCSP would not generate significant population growth within the City. Given that the GCSP would not generate significant population growth, it is not anticipated that the GCSP would result in increased usage of public libraries.

CEQA Determination

As such, the Proposed Project would have a **less than significant impact** on public libraries. No mitigation is required.

NEPA Determination

As such, the Proposed Project would have **no adverse effects** on public libraries under NEPA

3.10.5 Cumulative Impacts

As defined in the State CEQA Guidelines, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for public services. As stated for each public service below, public services in the City are provided by the City, and are generally not impacted by projects occurring outside of the City; therefore, the cumulative area analyzed for public services is the area occurring within the City's limits.

Fire Protection. The geographic area for cumulative analysis of fire protection services is defined as the LBFD service territory. The City is almost entirely built out, with most new development occurring as in-fill projects. The LBFD anticipates cumulative demand in order to plan for overall service. This cumulative demand is anticipated to be met through project implementation as the City would continue to charge future development impact fees to fund costs of providing additional

fire services necessary to accommodate such development. Furthermore, through implementation of the Proposed Project, the City will reduce the potential for dangerous fires by concentrating development within urban areas where there is a low fire risk and by requiring that future projects comply with applicable City and State regulations related to fire. Therefore, the Proposed Project's contribution to fire protection impacts would **not be cumulatively considerable**, and no mitigation is required.

Police Protection. The geographic area for cumulative analysis of police projection is defined as the service area for the LBPD. The City is almost entirely built out, with most new development occurring as in-fill projects. This cumulative demand is anticipated to be met through project implementation as the City would continue to charge future development impact fees to fund costs of providing additional fire services necessary to accommodate such development. In addition, the need for additional law enforcement associated with cumulative growth would be addressed through the annual budgeting process when budget adjustments would be made in an effort to meet changes in service demand. Therefore, the Proposed Project's contribution to police protection impacts would **not be cumulatively considerable**, and no mitigation is required.

Other Public Services (Public Libraries). The geographic area for the cumulative analysis of public libraries is defined as the service territory for the LBPL system. As discussed above, the Proposed Project would not result in substantial population growth, which could create a need to expand existing or planned library facilities, or otherwise adversely impact LBPL services. Therefore, the Proposed Project's contribution to library impacts would **not be cumulatively considerable**, and no mitigation is required.

3.10.6 Mitigation Measures

There would be no significant adverse impacts of the Proposed Project related to public services. No mitigation is required.

3.10.7 Significance After Mitigation

No mitigation measures are required and all potential impacts related to public services would remain **less than significant**.

3.10.8 References

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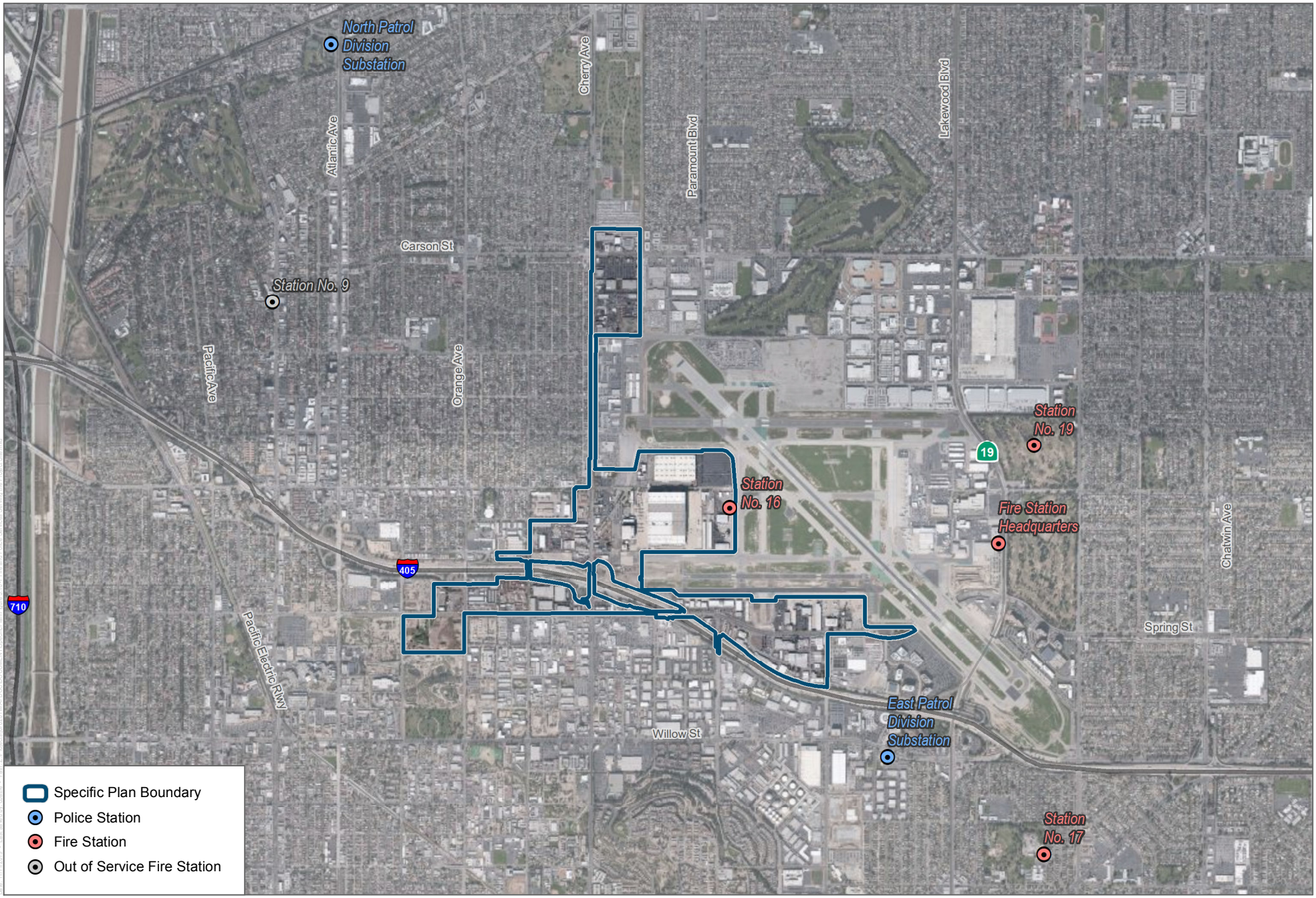

SOURCE: Bing 2018

DUDEK

0 1,000 2,000 Feet

FIGURE 3.10-1

Fire and Police Services Serving the Project Site

Globemaster Specific Plan

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3.11 TRANSPORTATION

This section describes the existing transportation conditions within the Globemaster Corridor Specific Plan (GCSP; Proposed Project) area; identifies associated regulatory requirements; evaluates potential adverse impacts related to conflicts with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system; conflicts with an applicable congestion management program; conflicts with State CEQA Guidelines Section 15064.3, subdivision (b); and identifies mitigation measures related to implementation of the Proposed Project. The Traffic Impact Analysis (TIA), prepared by Linscott, Law & Greenspan Engineers (LLG) dated June 30, 2020 and the Vehicle Miles Traveled (VMT) Analysis prepared by LSA dated June 1, 2020, are included in Appendix D of this PEIR/PEIS.

The Initial Study (IS) and Notice of Preparation (NOP) are contained in Appendix A-1, Initial Study; and Appendix A-2, Notice of Preparation, respectively. Comments regarding transportation, received in response to the NOP (see Appendix A-3, Notice of Preparation Comment Letters), specifically related to congestion, walkability, and overall traffic circulation, and have been considered in the preparation of the analyses presented in this section.

The IS found that the Proposed Project would have a potentially significant impact as it relates to transportation (Appendix A-1). As such, all impacts will be addressed further in this Draft Program Environmental Impact Report (PEIR)/Draft Program Environmental Impact Statement (PEIS). As explained in the section, level of service (LOS) and vehicle delay are no longer considered an environmental impact under the California Environmental Quality Act (CEQA) as of July 1, 2020 under SB 743. At the time the Notice of Preparation (NOP) was published (September 12, 2018), LOS was the applicable metric for evaluating transportation and traffic impacts under CEQA. Therefore, the transportation analysis shown in this section presents the LOS metric and the Vehicle Miles Traveled (VMT) metric for assessing transportation impacts per the requirements under CEQA.

3.11.1 Regulatory Setting

Federal

There are no applicable federal regulations related to traffic that would apply to the Proposed Project.

State

SB-743 (Status and Application to this Analysis) On September 27, 2013, Governor Brown signed SB 743, which became effective on January 1, 2014. The purpose of SB 743 is to streamline the review under the CEQA process for several categories of development projects including the development of infill projects in transit priority areas and to balance the needs of congestion

management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions. SB 743 adds Chapter 2.7: Modernization of Transportation Analysis for Transit Oriented Infill Projects to the CEQA Statute (Public Resources Code Section 21099). Section 21099(d)(1) provides that aesthetic and parking impacts of a residential, mixed-use residential, or employment center project on an infill site within a transit priority area shall not be considered significant impacts on the environment. In addition, SB 743 mandates that alternative metric(s) for determining impacts relative to transportation shall be developed to replace the use of LOS in CEQA documents.

In the past, environmental review of transportation impacts focused on the delay that vehicles experience at intersections and on roadway segments, which is often measured using LOS. Mitigation for impacts on vehicular delay often involves increasing capacity such as widening a roadway or the size of an intersection, which in turn encourages more vehicular travel and greater pollutant emissions. Additionally, improvements to increase vehicular capacity can often discourage alternative forms of transportation such as biking and walking. SB743 directed the Office of Planning and Research (OPR) to develop an alternative metric(s) for analyzing transportation impacts in CEQA document. The alternative shall promote the state's goals of reducing greenhouse gas emissions and traffic-related air pollution, promoting the development of multimodal transportation system, and providing clean, efficient access to destinations. Under SB 743, it was anticipated that the focus of transportation analysis will shift from vehicle delay to vehicle miles traveled (VMT) within transit priority areas (i.e., areas well served by transit).

Pursuant to SB 743, OPR released the draft revised CEQA Guidelines in November 2017, recommending the use of VMT for analyzing transportation impacts. Additionally, OPR released Updates to Technical Advisory on Evaluating Transportation Impacts in CEQA, to provide guidance on VMT analysis. In this Technical Advisory, OPR provides its recommendations to assist lead agencies in screening out projects from VMT analysis and selecting a significance threshold that may be appropriate for their particular jurisdictions. While OPR's Technical Advisory is not binding on public agencies, CEQA allows lead agencies to "consider thresholds of significance... recommended by other public agencies, provided the decision to adopt those thresholds is supported by substantial evidence." (CEQA Guidelines, § 15064.7, subd. (c).)

In December 2018, the CEQA Guidelines were updated to add new Section 15064.3, "Determining the Significance of Transportation Impacts" that describes specific considerations for evaluating a project's transportation impacts using the VMT methodology. This new methodology is required to be used for projects beginning on July 1, 2020.

State CEQA Guidelines Section 15064.3, subdivision (b) is divided into four subdivisions as follows:

(1) Land Use Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.

(2) Transportation Projects. Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, such as in a regional transportation plan EIR, a lead agency may tier from that analysis as provided in Section 15152.

(3) Qualitative Analysis. If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.

(4) Methodology. A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled, and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project.

The City of Long Beach Planning Commission approved CEQA Transportation Thresholds of Significance for City of Long Beach and Draft Traffic Impact Analysis Guidelines to reflect the requirements per SB 743 on June 4, 2020. The County of Los Angeles has not adopted new traffic impact study guidelines in accordance with SB 743. Due to the timing of the NOP for this project in 2018, the existing and buildout LOS analysis is based on the City's traffic study guidelines as adopted at the time of the NOP, which use LOS and delay. The VMT analysis is

also provided and is based on the City CEQA guidelines as a measure for significant transportation impacts under CEQA.

State of California Department of Transportation (Caltrans)

Caltrans' Draft Transportation Impact Study Guide (TISG), February 2020, will replace the *Guide for the Preparation of Traffic Impact Studies* (Caltrans 2002). Per the 2020 TISG, Caltrans' primary review focus is VMT, replacing LOS as the metric used in CEQA transportation analyses. Caltrans recommends use of OPR's recommended thresholds and guidance on methods of VMT assessment found in OPR's Technical Advisory (OPR 2018) for land use projects. In addition to VMT, the 2020 TISG states that it may request a targeted operational and safety analysis to address a specific geometric or operational issue related to the State Highway System and connections with the State Highway System. It is anticipated the TISG will be adopted in June/July 2020. The mainline and freeway ramp analysis provided in this section and included in Appendix D is consistent with this requirement and is based on Caltrans 2002 Guide.

Pursuant to the Caltrans *Guide for the Preparation of Traffic Impact Studies*, and based on recent coordination with Caltrans, analyses of State highway facilities should be conducted when and if a proposed project is expected to add 50 or more peak hour trips in either direction on a freeway mainline segment or 10 or more peak hour trips to a freeway off-ramp location. Although the Proposed Project at build-out is not expected to generate 50 or more vehicle trips, during either the AM or PM peak commute hours, at any of the freeway mainline locations, analysis was prepared for five mainline freeway segments in the Proposed Project vicinity pursuant to Caltrans analysis methodologies. The Proposed Project is expected to add 10 or more vehicle trips during the AM and/or PM commute peak hours to some of the adjacent freeway ramp locations. Therefore, intersection analyses were prepared for the four Caltrans ramp study intersections in the Proposed Project vicinity pursuant to Caltrans analysis methodologies.

Local

Los Angeles County Congestion Management Program

The City is subject to the Los Angeles County Congestion Management Plan (CMP). The Los Angeles County CMP was created statewide because of Proposition 111 in 1990 and was implemented locally by the Los Angeles County Metropolitan Transportation Authority (Metro). The CMP for Los Angeles County requires that the traffic impact to be analyzed for individual development projects that may have regional significance. A specific system of arterial roadways plus all freeways comprises the CMP system. A total of 164 intersections are identified for monitoring on the system in Los Angeles County.

CMP Transportation Impact Analysis (TIA) Guidelines are provided in the 2010 Congestion Management Plan for Los Angeles County. According to these guidelines, an analysis of the effects that a project may have on the CMP system is conducted in the following instances:

- The project is projected to add 50 or more vehicle trips during either AM or PM weekday peak hours to CMP arterial monitoring intersections, including freeway on-ramps or off-ramps.
- The project is projected to add 150 or more trips in either direction during either the AM or PM weekday peak hours at CMP mainline freeway monitoring locations.

The Proposed Project was reviewed for its potential to trigger the above thresholds, which would then require the Proposed Project to be further analyzed under the CMP. This review is included in Appendix D and is summarized in Section 3.11.4, Impact Analysis.

City of Long Beach General Plan

The Long Beach General Plan represents a comprehensive approach for managing the community's future. The Long Beach General Plan also reflects the City's long-term strategy for directing physical, economic, and cultural development.

Mobility Element (2013)

The General Plan Mobility Element 2035 was adopted in October 2013. The Mobility Element seeks to guide development and improvements to the existing circulation system. This element establishes several goals aimed at improving the existing transportation system so that it is responsive to all travel modes. The following transportation/traffic goals and policies in the City's Mobility Element are applicable to the Proposed Project.

Mobility of People (MOP) Policies:

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

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

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

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

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

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

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

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

Land Use Element (1989)

The City's General Plan Land Use Element (1989) was updated in 2019. At time the Notice of Preparation (NOP) for this PEIR/PEIS was published and circulated for review (September 12, 2018), the 1989 General Plan Land Use Element was in effect. Subsequent to the NOP, the 2019 General Plan Land Use Element was approved by City Council on December 3, 2019. The following is the specified goals and objectives from the 1989 Land Use Element that are related to transportation/traffic.

Facilities Maintenance: Long Beach will maintain physical facilities and public rights-of-way at a high level of functional and aesthetic quality, manifesting the pride of citizens of their City and ensuring that future generations need not bear the burden of deferred maintenance.

Functional Transportation: Long Beach will maintain or improve the current ability to move people and goods to and from development centers while preserving and protecting residential neighborhoods.

Land Use Element (2019)

In 2019, the City is currently approved a new General Plan Land Use Element. The updated Land Use Element incudes strategies and policies to encourage the coordination of land use and transportation:

STRATEGY No. 1: Support sustainable urban development patterns.

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

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

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

City of Long Beach Zoning Regulations

Pursuant to Chapter 21.64 (Transportation Demand Management) of the LBMC, applicable projects subject to a Site Plan Review (SPR) entitlement are required to incorporate transportation demand and trip reduction measures. The project types and thresholds for compliance are summarized in Table 3.11-1, Transportation Demand Management Ordinance Requirements.

Table 3.11-1
Transportation Demand Management Ordinance Requirements

TDM Requirements	New Nonresidential Development		
	25,000+ Square Feet	50,000+ Square Feet	100,000+ Square Feet
Transportation information area	X	X	X
Preferential carpool/vanpool parking		X	X
Parking designed to admit vanpools		X	X
Bicycle parking		X	X
Carpool/vanpool loading zones			X
Efficient pedestrian access			X
Bus stop improvements			X
Safe bike access from street to bike parking			X
Transit review	For all residential and nonresidential projects subject to EIR		

Source: City of Long Beach 2004.

3.11.2 Existing Conditions

3.11.2.1 Existing Street System

Figure 3.11-1, Existing Year 2018 Roadway Conditions and Intersection Controls, illustrates the existing physical characteristics of the key intersections and streets, including intersection geometry and traffic control, number of travel lanes, median type, parking designations, and posted speed limits.

Figure 3.11-2, Existing Year 2018 Street Classifications, illustrates the existing street classifications for the existing street network within and around the Plan Area provided in the City of Long Beach General Plan Mobility Element.

The principal local network of streets serving the Proposed Project area includes Lakewood Boulevard, Willow Street, Cherry Avenue, Carson Street, Atlantic Avenue, Spring Street, Wardlow Road, Orange Avenue, Cover Street, Bixby Road, 32nd Street, 36th Street, and Walnut Avenue. The following discussion provides a brief synopsis of these key area streets. The descriptions are based on an inventory of existing roadway conditions.

Lakewood Boulevard is generally an eight-lane roadway south of Conant Street and a six-lane roadway north of Conant Street oriented in the north–south direction and is located east of the project area and airport. On-street parking is not permitted on both sides of the street. Sidewalks are generally provided on both sides of the roadway within the project's vicinity. The posted speed limit on Lakewood Boulevard is 45 mph. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Lakewood Boulevard as a Regional Corridor.

Willow Street is generally a six-lane divided roadway oriented in the east-west direction and provides connectivity between Atlantic Avenue and Lakewood Boulevard within the vicinity of the project area. On-street parking is generally not permitted on either side of the roadway within the vicinity of the project. The posted speed limit on Willow Street is 40 mph. Sidewalks are generally provided on both sides of the roadway within the project's vicinity. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Willow Street as a Boulevard.

Cherry Avenue is generally a four-lane divided roadway between Wardlow Road and Spring Street, a five-lane divided roadway north of Wardlow Road and a six-lane divided roadway south of Spring Street, oriented in the north–south direction that traverses through the middle of the project area. On-street parking is permitted on both sides of the street. Multiple driveways are located along Cherry Avenue, which provides full access to the existing businesses. The posted speed limit on Cherry Avenue is 40 mph north of Wardlow Road, 35 mph between Wardlow Road and Spring Street, and 40 mph south of Spring Street. Sidewalks are generally provided and are adequate north of Wardlow Road. However, south of Wardlow Road sidewalks are generally located on one side of the road or missing altogether. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Cherry Avenue as a Major Avenue.

Carson Street is a four-lane divided roadway west of Cherry Avenue and a six-lane divided roadway east of Cherry Avenue. Carson Street is oriented in the east–west direction and provides connectivity from Atlantic Avenue to Lakewood Boulevard within the vicinity of the project area. On-street parking is not permitted on both sides of the street east of Cherry Avenue, but is permitted on both sides of the street west of Cherry Avenue within the vicinity of the project area. The posted speed limit on Carson Street is 40 miles per hour (mph). Sidewalks are generally provided on both sides of the roadway within the project's vicinity. Crosswalks are generally

provided at all signalized intersections. The City's Mobility Element designates Cover Street as a Major Avenue.

Atlantic Avenue is a four-lane, divided roadway oriented in the north-south direction and provides connectivity west of the project area. The posted speed limit is 35 mph south of Spring Street and 30 mph north of Spring Street. Parking is generally not permitted on both sides of the roadway within the vicinity of the project. Sidewalks are generally provided on both sides of the roadway within the project's vicinity. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Lakewood Boulevard as a Major Avenue.

Spring Street is generally a four-lane divided roadway west of Temple Avenue and a six-lane divided roadway east of Temple Avenue, oriented in the east-west direction and provides connectivity between Atlantic Avenue and Lakewood Boulevard within the vicinity of the project area. On-street parking is not permitted on either side of the roadway west of Orange Avenue, but is permitted on both sides of the roadway east of Orange Avenue until Junipero Avenue within the vicinity of the project. The posted speed limit on Spring Street is generally 40 mph. Sidewalks are generally provided and are adequate west of Cherry Avenue. However, east of Cherry Avenue sidewalks are generally located on one side of the road or missing altogether. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Spring Street as a Major Avenue.

Wardlow Road is a four-lane undivided roadway west of Cherry Avenue and a four-lane divided roadway east of Cherry Avenue. Wardlow Road provides east–west connectivity between Cherry Avenue and Walnut Avenue. Wardlow Road also extends to the eastern portion of the project area and terminates at the airport. However, Wardlow Road continues just east of the Lakewood Boulevard. On-street parking is generally permitted on both sides of the street west of Cherry Avenue. The posted speed limit on Wardlow Road is 35 mph west of Cherry Avenue and 30 mph east of Cherry Avenue. Sidewalks are generally provided on both sides of the roadway within the project's vicinity. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Wardlow Road as a Minor Avenue.

Orange Avenue is a two-lane, divided roadway oriented in the north-south direction that traverses through the south-western portion of the project area. The posted speed limit is 35 mph north of Spring Street and 40 mph south of Spring Street. On-street parking is generally not permitted on both sides of the roadway, except north of 32nd Street where parking is permitted within the vicinity of the project. Sidewalks are generally provided and are adequate north of Spring Street. However, south of Spring Street sidewalks are generally located on one side of the road or missing altogether. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Orange Avenue as a Minor Avenue.

Cover Street is generally a four-lane divided roadway oriented in the east–west direction and provides connectivity between Cherry Avenue and Lakewood Boulevard. Cover Street is partially located in the City of Lakewood. On-street parking is not permitted on both sides of the street. The posted speed limit on Cover Street is 40 mph. Sidewalks are generally provided on both sides of the roadway within the project's vicinity. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Cover Street as a Neighborhood Connector.

Bixby Road is generally a two-lane undivided roadway oriented in the east–west direction and provides connectivity between west of Cherry Avenue. On-street parking is permitted on both sides of the street. The posted speed limit on Bixby Road is 25 mph. Sidewalks are generally provided on both sides of the roadway within the project's vicinity. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Cover Street as a Neighborhood Connector.

32nd Street is a two-lane undivided roadway oriented in the east–west direction. In direct proximity to the project area, 32nd Street consists of an alleyway that traverses the project area. Along this alleyway, multiple gated areas restrict through-traffic to some users. The posted speed limit on 32nd street is 25 mph. Sidewalks are generally provided and are adequate west of Orange Avenue. However, east of Orange Avenue sidewalks are generally located on one side of the road or missing altogether. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates 32nd Street as a Local Street.

36th Street is a two-lane undivided roadway oriented in the east-west direction and provides connectivity between Cherry Avenue and Walnut Avenue. 36th Street also extends to the eastern portion of the project area and terminates at the airport. On-street parking is generally permitted on both sides of the street. The posted speed limit on 36th Street is 25 mph. Sidewalks are generally provided on both sides of the roadway within the project's vicinity. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates 36th Street as a Local Street.

Walnut Avenue is generally a two-lane undivided roadway oriented in the north–south direction and provides access to the project area via multiple full-access driveways. On-street parking is permitted on both sides of the street. The posted speed limit on Walnut Avenue is 30 mph north of Spring Street and 40 mph south of Spring Street. Sidewalks are generally provided and are adequate north of 33rd Street. However, south of 33rd Street sidewalks are generally located on one side of the road or missing altogether. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Walnut Avenue as a Local Street.

Temple Avenue is oriented in the north-south direction beginning just south of the Long Beach Airport at Spring Street and continuing south towards Bluff Park at Ocean Boulevard. Temple

Avenue is a two-lane roadway that has discontinuous sidewalks on either side. There is only a sidewalk on the west side of Temple Avenue in the Plan Area. A portion of the Plan Area includes the I-405 freeway overpass at Temple Avenue, which connects the Long Beach Airport industrial areas with other industrial uses to the south of the I-405 freeway. The City's Mobility Element designates Temple Avenue as a Neighborhood Connector.

Redondo Avenue is oriented in the north-south direction beginning just south of the Long Beach Airport at Spring Street and continuing south towards Bluff Park at Ocean Boulevard. Redondo Avenue is a two-lane roadway that connects industrial portions of Long Beach near the I-405 freeway and the Plan Area with the residential portions moving towards the coast. Sidewalks are provided on both sides of the street in the Plan Area. The roadway borders the City of Signal Hill on its eastern boundary. The City's Mobility Element designates Redondo Avenue as a Major Avenue.

3.11.2.2 Existing Truck Routes

Figure 3.11-3, Existing Year 2018 Truck Routes, shows the designated truck routes in the City. Designated truck routes provide for the regulated movement of truck traffic through the City, and minimizes intrusion of truck traffic in sensitive areas, such as residential neighborhoods. The designation of truck routes is intended to direct truck traffic to those streets where they would cause the least amount of neighborhood intrusion and where noise, vibration, and other factors would have the least impact. Primary truck routes in close proximity to the Plan Area are provided via Cherry Avenue, Lakewood Boulevard, Carson Street, and Spring Street. Regional freeway access is provided at the Cherry Avenue/I-405 interchange.

3.11.2.3 Existing Public Transit

Figure 3.11-4, Existing Year 2018 Public Transit, illustrates the transit routes of LBT within the vicinity of the Plan Area and identifies the location of the existing bus stops in close proximity to the Plan Area. Transit modes in the City consist of both light rail and bus routes. Within the City, the Los Angeles County Metropolitan Transportation Authority (Metro) operates the Metro Blue Line, a passenger light rail line, which provides connection between Downtown Long Beach and Downtown Los Angeles. There are no Metro Blue Line stations in the Plan Area, and the nearest station is the Willow Street Station (approximately 0.6-miles southwest from the Plan Area).

The bus lines servicing the City consist of Long Beach Transit (LB Transit), Los Angeles County Metro, and Orange County Transit Authority (OCTA). LB Transit provides service throughout Long Beach, Lakewood, and Signal Hill. Most LB Transit routes run seven days a week and all routes are wheelchair accessible. There are four routes that travel to and from the Long Beach Airport, providing connections with the Metro light rail service to Los Angeles, El Segundo, and Norwalk, as well as to all Long Beach neighboring cities: Carson, Compton, Paramount, Bellflower, Artesia, Cerritos, Hawaiian Gardens, and Norwalk.

The Plan Area is serviced via LB Transit Lines 21, 22, and 131, which travel along Cherry Avenue and have stops at Carson Street and Wardlow Road.

- **LBT Line 21/22** operates between the northern and southern limits of the City. A major destination includes downtown Long Beach. In general, travel times from the Plan Area to downtown Long Beach would take around 30 minutes. Headways between buses vary throughout the day, but they typically arrive on 30-minute intervals.
    - **Line 21** Service is provided Monday through Friday from approximately 5:00 AM to 12:35 AM and on Saturdays/Sundays from 5:25 AM to 12:35 AM.
    - **Line 22** Service is provided Monday through Friday from approximately 5:20 a.m. to 7:05 p.m. and on Saturdays/Sundays from 6:00 a.m. to 8:05 p.m.
- **LBT Line 131** operates between Redondo Beach and Seal Beach. Major destinations along Line 131 include the Wardlow Metro Blue Line Station, Belmont Shore, and Alamitos Bay. Service is provided Monday through Friday from approximately 6:39 a.m. to 9:06 p.m. and on Saturdays/ Sundays from 6:38 a.m. to 8:40 p.m. In general, travel times from the Plan Area to the Wardlow Metro Blue Line Station, Belmont Shore, and Alamitos Bay would take around 10 minutes, 15 minutes, and 50 minutes, respectively. Headways between buses vary throughout the day, but they typically arrive on 30-minute intervals.

3.11.2.4 Existing Bicycle Master Plan

The City of Long Beach promotes bicycling as a means of mobility and a way in which to improve the quality of life within its community. The Long Beach Bicycle Master Plan 2040 (December 2016) recognizes the needs of bicycle users and aims to create a complete and safe bicycle network throughout the City. The City of Long Beach Bicycle Facilities in the vicinity of the Proposed Project area (existing and proposed) is shown on Figure 3.11-5A, Existing Bicycle Routes, and Figure 3.11-5B, Existing and Proposed "8-80" Bicycle Facilities. Per the Long Beach Bicycle Master Plan (Year 2040), the following provides a brief description of each Bicycle facility type:

Class I (Shared-Use Paths) are "8-to-80" facilities that provide completely separated, exclusive right-of-way for bicycling, walking, and other non-motorized uses. These facilities can be considered the easiest to ride on, especially for the interested but concerned riders, as there are few potential conflicts between people riding and people driving. Long Beach currently has 34.7 miles of shared-use path (Class I) facilities.

Class II (Bicycle Lanes) are striped, preferential lanes on roadways for one-way bicycle travel. Some bike lanes include striped buffers that add a few feet of separation between the bicycle land and traffic lane or parking aisle. These facilities are also important for the overall bikeway

network Long Beach strives to achieve in that they provide a designated space for riders along a roadway. Long Beach currently has nearly 60 miles of road with bike lanes.

Class III-A (Bicycle Boulevards) are on-street "8-to-80" bicycle facilities along low-speed roadways. These routes have been optimized for bicycle travel through signage, shared-lane markings, and engineering tools to slow traffic, reduce cut-through vehicle trips, and assist bicyclists and pedestrians in crossing busier roadways. Long beach currently has a single, 1.5-mile bicycle lane along Vista Street.

Class IV (Separated Bikeways), also known as a cycle track or Class IV bikeway, is an on-street "8-to-80" facility that is physically separated from motor vehicle traffic by a vertical element or barrier, such as a curb, bollards, or vehicle parking aisle are signed routes where people riding bicycles share a travel lane with people driving motor vehicles. Long Beach currently has 4.4 miles of separated bikeway facilities.

Within close proximity to the Project area, a Class II bike lane is currently provided along Orange Avenue, north of Bixby Road, along Cover Street, west of Paramount Boulevard, along Bixby Road, west of Cherry Avenue, along Carson Street, west of Orange Avenue, along Wardlow Road, east of Lakewood Boulevard, and along Spring Street, between Long Beach Boulevard and California Avenue. A Class III-C bike route is currently provided along Orange Avenue, between Bixby Road and Wardlow Road. An "8-to-80" off-street bikeway is currently provided along Cover Street, east of Paramount Boulevard, and along Carson Street, east of Downey Avenue. Figure 3.11-5A, Existing Bicycle Routes, illustrates the existing City of Long Beach bicycle network map.

According to the City of Long Beach Public Works Department, a Class IV bikeway is proposed on Spring Street, converting the no. 3 lane on either side of the roadway into a dedicated bikeway.

The Long Beach Bicycle Master Plan (Year 2040) identifies Cherry Avenue, Orange Avenue, Lakewood Boulevard, Carson Street, Bixby Road, Wardlow Road, Spring Street and Willow Street as recommended "8-to-80" bikeways, meaning that it should be designed to comfortably and safely serve cyclists of all ages (City of Long Beach, 2016). Figure 3.11-5B, Existing and Proposed "8-to-80" Bicycle Facilities, illustrates the existing and proposed "8-to-80" bikeway facilities.

Within the western portion of the Plan Area, the Orange Avenue Backbone Project will include the implementation of innovative pedestrian and bicycle infrastructure throughout Orange Avenue (renamed Alamitos Avenue to the south). The corridor will add 2.4 miles of Class IV bike lanes that will close network gaps and improve existing infrastructure to form a continuous 8.6-mile bikeway, as well as improved lighting, six protected intersections, high-visibility crosswalks throughout the corridor, and bus islands/curb extensions at four intersections. The improvements

prioritize pedestrian and bicyclist safety while promoting multi-modal connectivity and encouraging mode shift, reducing vehicular traffic and pollution impacts.

3.11.2.5 Existing Volumes

Traffic counts were conducted at the 28 key intersections in the vicinity of the Plan Area during the weekday AM and PM peak period (7:00 to 9:00 AM, 4:00 to 6:00 PM) in May 2018 (while school was still in session). Traffic counts are provided in Appendix A (Existing Traffic Count Data) of the TIA (Appendix D).

Of the 28 study intersections, eight (8) study intersections are located in the City of Long Beach, four (4) study intersections are located in the City of Signal Hill, one (1) study intersection is located in the City of Lakewood, eight (8) study intersections are located at the boundary between the Cities of Long Beach and Signal Hill, three (3) study intersections are located at the boundary between the Cities of Long Beach and Lakewood, and four (4) study intersections are freeway ramp intersections under Caltrans' jurisdiction.

Approximately 1,409,441 square feet (SF) of existing vacant industrial uses (i.e., former Boeing site) in the GSCP area was not occupied on the dates that traffic counts were conducted. To provide a conservative assessment, existing trip credits were not accounted for in the 1,409,441 SF of existing vacant industrial uses in the Proposed Project's trip generation potential.

Figure 3.11-6, Existing (Year 2018) AM Peak Hour Traffic Volumes, and Figure 3.11-7, Existing (Year 2018) PM Peak Hour Traffic Volumes, illustrate the existing weekday AM and weekday PM peak hour traffic volumes at the 28 key intersections, respectively.

3.11.2.6 Methodology

Vehicle Miles Traveled

The Governor's Office of Planning and Research (OPR) has approved the addition of new Section 15064.3, "Determining the Significance of Transportation Impacts" to the State's CEQA Guidelines, compliance with which will be required beginning July 1, 2020. The Updated CEQA Guidelines state that "…*generally, vehicle miles traveled (VMT) is the most appropriate measure of transportation impacts…*" and define VMT as "…*the amount and distance of automobile travel attributable to a project…*". It should be noted that "automobile" refers to on-road passenger vehicles, specifically cars and light trucks. OPR has clarified in the Technical Advisory and recent informational presentations that heavy-duty truck VMT is not required to be included in the estimation of a project's VMT Other relevant considerations may include the effects of the project on transit and non-motorized traveled.

The City of Long Beach CEQA Guidelines, dated June 2020 include methodologies to analyze VMT impacts for land use plans. Since the project is a specific plan, methodologies described in *Chapter 6: Significance Thresholds for Land Use Plans* were used for the analysis. The draft guidelines recommend the following methodology:

> *"Therefore, the recommended methodology for conducting VMT assessments for most land plans is to compare the existing VMT per household for the land plan area with the expected horizon year VMT per household. The recommended target is to achieve a lower VMT per household in the horizon year with the proposed land plan than occurs for the existing condition. If a land plan is composed of primarily employment uses (i.e., the land plan is for an employment center or has a focus on nonresidential uses), then VMT per employee would be an appropriate metric and the target is to achieve a lower VMT per employee in the horizon year with the proposed land plan than occurs for the existing condition."*

Since the Proposed Project is a land use plan primarily composed of non-residential uses, VMT per employee is the appropriate metric to compare project's VMT to that of the region.

Level of Service

Pursuant to the City of Long Beach Traffic Impact Guidelines (City of Long Beach, 2004), existing AM and PM peak hour operating conditions for the key signalized study intersections were evaluated using the Intersection Capacity Utilization (ICU) methodology for signalized intersections and the Highway Capacity Manual (HCM) methodology for unsignalized intersections and Caltrans/CMP intersections.

Intersection Capacity Utilization (ICU) Method of Analysis

In conformance with City of Long Beach, City of Signal Hill, City of Lakewood, and LA County Public Works (PW) requirements, existing weekday peak hour operating conditions for the key signalized study intersections were evaluated using the Intersection Capacity Utilization (ICU) method. The ICU technique is intended for signalized intersection analysis and estimates the volume to capacity (V/C) relationship for an intersection based on the individual V/C ratios for key conflicting traffic movements.

The ICU value translates to a Level of Service (LOS) estimate, which is a relative measure of the intersection performance. The six qualitative categories of LOS have been defined along with the corresponding ICU value range, and are shown in Table 3.11-1 (Level of Service Criteria for Signalized Intersections). The ICU or V/C value is the sum of the critical volume to capacity ratios at an intersection; it is not intended to be indicative of the LOS of each of the individual turning movements.

Highway Capacity Manual (HCM) Method of Analysis (Unsignalized Intersections)

The HCM unsignalized methodology for stop-controlled intersections was utilized for the analysis of the unsignalized intersections. This methodology estimates the average control delay for each of the subject movements and determines the level of service for each movement.

The HCM control delay value translates to a LOS estimate, which is a relative measure of the intersection performance. The six qualitative categories of LOS have been defined along with the corresponding HCM control delay value range, as shown in Table 3.11-2 (Level of Service Criteria for Unsignalized Intersections - HCM).

3.11.2.7 Significance Criteria

Vehicles Miles Traveled

Since the Proposed Project includes only non-residential land uses, based on the draft CEQA transportation guidelines, the VMT per employee metric was analyzed. The VMT per employee for the Proposed Project was compared with the corresponding average for the region. The guidelines identify the entire Los Angeles County as the region. Additionally, based on the guidelines, the horizon year project average was compared with the existing regional average.

Level of Service

LOS was used as the measure of effectiveness for the performance of the circulation system by the local agencies with jurisdiction over the study area.

According to the City of Long Beach, City of Signal Hill, and City of Lakewood, LOS D is the minimum acceptable condition that should be maintained during the peak commute hours, or the current LOS if the existing LOS is worse than LOS D (i.e., LOS E of F).

City of Long Beach

The City of Long Beach utilizes the LOS criteria for signalized and unsignalized intersections as shown in Table 3.11-2 (Level of Service Criteria for Signalized Intersections) and Table 3.11-3 (Level of Service Criteria for Unsignalized Intersections), respectively.

Table 3.11-2
Level of Service Criteria for Signalized Intersections

Level of Service (LOS)	Volume/Capacity (V/C)	Level of Service Description
A	≤ 0.600	EXCELLENT. No vehicle waits longer than one red light, and no approach phase is fully used.

Table 3.11-2
Level of Service Criteria for Signalized Intersections

Level of Service (LOS)	Volume/Capacity (V/C)	Level of Service Description
B	0.601 – 0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701 – 0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801 – 0.900	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.901 – 1.000	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 1.000	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Potentially very long delays with continuously increasing queue lengths.

Source: City of Long Beach 2004.

Table 3.11-3
Level of Service Criteria for Unsignalized Intersections - HCM

Level of Service (LOS)	Average Control Delay (sec/veh)	Level of Service Description
A	≤ 10.0	Little or no delay
B	> 10.0 and ≤ 15.0	Short traffic delays
C	> 15.0 and ≤ 25.0	Average traffic delays
D	> 25.0 and ≤ 35.0	Long traffic delays
E	> 35.0 and ≤ 50.0	Very long traffic delays
F	> 50.0	Severe congestion

Source: Highway Capacity Manual 6.

City of Lakewood

According to the City of Lakewood Circulation Element (1996), LOS D is the minimum acceptable condition that should be maintained during the peak hours for all roadway segments and intersections.

City of Signal Hill

According to the City of Signal Hill Circulation Element (2009), LOS D is the minimum acceptable condition that should be maintained during the peak hours.

3.11.2.8 Existing Level of Service

Table 3.11-4 (Existing (2018) Intersection Peak Hour Levels of Service) summarizes the existing peak hour service level calculations for the 28 key study intersections based on existing traffic volumes and current street geometrics. One key study intersection (Orange Avenue/I-405 SB Ramps) operates at unacceptable LOS F in the AM and PM peak hour under existing (2018) conditions. The remaining twenty-seven (27) key study intersections currently operate at LOS D or better during the weekday AM and PM peak hours.

Table 3.11-4
Existing (2018) Intersection Peak Hour Levels of Service

#	Key Intersection	Time Period	ICU	Delay (s/v)	LOS	Deficient LOS?
1	Cherry Avenue at	AM	0.706	--	C	No
	Carson Street (Long Beach)	PM	0.807	--	D	No
2	Shopping Center at	AM	0.401	--	A	No
	Carson Street (Long Beach)	PM	0.609	--	B	No
3	Cherry Avenue at	AM	0.544	--	A	No
	Cover Street (Long Beach/Lakewood)	PM	0.790	--	C	No
4	Cherry Avenue at	AM	0.602	--	B	No
	Bixby Road (Long Beach/Lakewood)	PM	0.625	--	B	No
5	Cherry Avenue at	AM	0.640	--	B	No
	36th Street (Long Beach/Lakewood)	PM	0.748	--	C	No
6	Industry Avenue at	AM	0.369	--	A	No
	36th Street (Lakewood)	PM	0.513	--	A	No
7	Cherry Avenue at	AM	0.766	--	C	No
	Wardlow Road (Long Beach)	PM	0.857	--	D	No
8	Boeing at	AM	0.117	--	A	No
	Wardlow Road (Long Beach)	PM	0.114	--	A	No
9	Orange Avenue at	AM	0.719	--	C	No
	32nd Street (Signal Hill)	PM	0.856	--	D	No
10	I-405 Northbound Ramps at	AM	--	11.2	B	No
	32nd Street (Signal Hill/Caltrans)	PM	--	19.7	C	No
11	**Orange Avenue at**	AM	--	**94.9**	**F**	**Yes**
	I-405 Southbound Ramps (Long Beach/Caltrans)	PM	--	**188.0**	**F**	**Yes**
12	Atlantic Avenue at	AM	0.732	--	C	No
	Spring Street (Signal Hill/Long Beach)	PM	0.828	--	D	No
13	Olive Avenue at	AM	0.454	--	A	No
	Spring Street (Signal Hill)	PM	0.519	--	A	No
14	California Avenue at	AM	0.590	--	A	No
	Spring Street (Signal Hill/Long Beach)	PM	0.714	--	C	No
15	Orange Avenue at	AM	0.826	--	D	No
	Spring Street (Signal Hill/Long Beach)	PM	0.833	--	D	No
16	Walnut Avenue at	AM	0.584	--	A	No
	Spring Street (Signal Hill/Long Beach)	PM	0.717	--	C	No
17	Cherry Avenue at	AM	0.690	--	B	No
	Spring Street (Signal Hill/Long Beach)	PM	0.738	--	C	No
18	I-405 Southbound Off-Ramp at	AM	0.732	--	C	No
	Spring Street (Signal Hill/Long Beach/Caltrans)	PM	0.719	--	C	No
19	Temple Avenue at	AM	0.644	--	B	No
	Spring Street (Long Beach)	PM	0.668	--	B	No

Table 3.11-4
Existing (2018) Intersection Peak Hour Levels of Service

#	Key Intersection	Time Period	ICU	Delay (s/v)	LOS	Deficient LOS?
20	Temple Avenue at	AM	0.375	--	A	No
	I-405 Northbound Off-Ramp (Long Beach/Caltrans)	PM	0.458	--	A	No
21	Redondo Avenue at	AM	0.631	--	B	No
	Spring Street (Long Beach)	PM	0.720	--	C	No
22	Kilroy Airport Way at	AM	0.612	--	B	No
	Spring Street (Long Beach)	PM	0.815	--	D	No
23	Lakewood Boulevard at	AM	0.818	--	D	No
	Spring Street (Long Beach)	PM	0.849	--	D	No
24	Orange Avenue at	AM	--	14.5	B	No
	29th Street (Signal Hill/Long Beach)	PM	--	14.9	B	No
25	California Avenue at	AM	0.613	--	B	No
	Willow Street (Signal Hill/Long Beach)	PM	0.593	--	A	No
26	Orange Avenue at	AM	0.736	--	C	No
	Willow Street (Signal Hill/Long Beach)	PM	0.845	--	D	No
27	Walnut Avenue at	AM	0.510	--	A	No
	Willow Street (Signal Hill)	PM	0.617	--	B	No
28	Cherry Avenue at	AM	0.687	--	B	No
	Willow Street (Signal Hill)	PM	0.818	--	D	No

Notes:

LOS = Level of Service, please refer to *Tables 1* and *2* for the LOS definitions

ICU = Intersection Capacity Utilization

s/v = seconds per vehicle (delay)

= Deficient LOS based on City's LOS standards.

3.11.2.9 Year 2040 Baseline Traffic Forecasts

The Year 2040 Baseline traffic projections account for an increase in the existing traffic volumes due to overall regional growth, based on the historical rates identified in the most current *2010 Congestion Management Program (CMP) for Los Angeles County.* In addition, planned improvements identified by the City of Long Beach was described under Year 2040 Planned Improvements.

Ambient Growth

The ambient traffic growth factor is intended to include unknown and future related projects in the study area, as well as account for regular growth in traffic volumes due to the development of projects outside the study area from existing (Year 2018) to anticipated future Project Buildout in Year 2040. The ambient traffic growth was applied to existing (Year 2018) traffic conditions based on a two-step process. First, based on the ambient growth rates contained in the 2010 CMP for Los Angeles County for the City of Long Beach between Year 2015 and Year 2020, the ambient growth factor of 1.52% per year was applied to Year 2018 to develop Year 2020 baseline traffic volumes.

Second, based on the ambient growth rates contained in the 2010 CMP for Los Angeles County for the City of Long Beach between Year 2020 and Year 2040, the ambient growth rate of 0.17% per year was applied to the Year 2020 baseline traffic volumes to develop the Year 2040 Baseline traffic volumes.

Figure 3.11-8, Year 2040 Baseline AM Peak Hour Traffic Volumes, and Figure 3.11-9, Year 2040 Baseline PM Peak Hour Traffic Volumes, present the Year 2040 Baseline traffic volumes at the 28 key intersections during the weekday AM and PM peak hours, respectively.

3.11.2.10 Year 2040 Planned Improvements

Based on direction from City staff, the City of Long Beach has planned improvements which include a signalized intersection at Orange Avenue/I-405 Southbound Ramps and protected bikeway facilities along Orange Avenue and Spring Street, which reduces intersection capacity at the intersections of Atlantic Avenue/Spring Street, California Avenue/Spring Street, Orange Avenue/Spring Street, Temple Avenue/Spring Street, Redondo Avenue/Spring Street and Orange Avenue/Willow Street. These planned improvements have been assumed under Year 2040 Baseline and Year 2040 Plus Project traffic conditions, and include the following[1]:

1. **Intersection 11 – Orange Avenue at I-405 SB Ramps (Long Beach/Caltrans):** Install a three-phase traffic signal. These improvements are subject to the approval of Caltrans.

[1] The Plan Area includes public right-of-way subject to three jurisdictions: City of Long Beach, City of Signal Hill, and City of Lakewood. Each jurisdiction retains their approval authority for mobility improvements subject to the

2. **Intersection 12 – Atlantic Avenue at Spring Street (Signal Hill/Long Beach):** Modify and restripe the eastbound and westbound approaches to include a left-turn lane, a through lane, and shared through-right turn lane. Modify the existing traffic signal accordingly. With implementation of improvements associated with the Spring Street Class IV Bikeway, this study intersection would be designed to include protected bike lanes (i.e., on-street bike lanes and a median buffer to separate bicycle traffic from vehicular traffic), which requires the removal of the existing exclusive westbound right-turn lane and eastbound right-turn lane.
3. **Intersection 14 – California Avenue at Spring Street (Signal Hill/Long Beach):** Modify and restripe the eastbound and westbound approaches to include a left-turn lane, a through lane, and shared through-right turn lane. Modify the existing traffic signal accordingly. With implementation of improvements associated with the Spring Street Class IV Bikeway, this study intersection would be designed to include protected bike lanes (i.e., on-street bike lanes and a median buffer to separate bicycle traffic from vehicular traffic), which requires the removal of the existing exclusive westbound right-turn lane and eastbound right-turn lane.
4. **Intersection 15 – Orange Avenue at Spring Street (Signal Hill/Long Beach):** Modify and restripe the northbound approach to include a left-turn lane, a through lane, and right turn lane. Modify the existing traffic signal accordingly. Modify the existing traffic signal accordingly. With implementation of improvements associated with the Orange Avenue Class IV Bikeway, this study intersection would be designed to include protected bike lanes (i.e., on-street bike lanes and a median buffer to separate bicycle traffic from vehicular traffic), which requires the removal of one existing northbound through lane.
5. **Intersection 19 – Temple Avenue at Spring Street (Long Beach):** Modify and restripe the eastbound and westbound approaches to include a left-turn lane, a through lane, and shared through-right turn lane. Modify the existing traffic signal accordingly. With implementation of improvements associated with the Spring Street Class IV Bikeway, this study intersection would be designed to include protected bike lanes (i.e., on-street bike lanes and a median buffer to separate bicycle traffic from vehicular traffic), which requires the removal of one existing eastbound through lane and one existing westbound through lane.
6. **Intersection 21 – Redondo Avenue at Spring Street (Long Beach):** Modify and restripe the eastbound and westbound approaches to include a left-turn lane, a through lane, and shared through-right turn lane. Modify the existing traffic signal accordingly. With implementation of improvements associated with the Spring Street Class IV Bikeway, this

design standards established by each jurisdiction's General Plan and Public Works Department. The City of Long Beach will conduct ongoing coordination and consultation with the City of Lakewood and Signal Hill, as applicable. Because other jurisdictions may have differing design standards compared to the City of Long Beach, future street improvements may not exactly match what is described here due to future design constraints.

study intersection would be designed to include protected bike lanes (i.e., on-street bike lanes and a median buffer to separate bicycle traffic from vehicular traffic), which requires the removal of one existing eastbound through lane, one existing westbound through lane and one existing westbound left-turn lane.

7. **Intersection 26 – Orange Avenue at Willow Street (Signal Hill/Long Beach):** Restripe the southbound approach to include a left-turn lane and a shared through-right turn lane. Modify the existing traffic signal accordingly. With implementation of improvements associated with the Orange Avenue Class IV Bikeway, the existing southbound right-turn lane would be removed to allow for the installation of on-street bike lanes and a buffer to separate bicycle traffic from vehicular traffic.

3.11.3 Thresholds of Significance

3.11.3.1 Significance Criteria

The following thresholds of significance are based on Appendix G of the State CEQA Guidelines. Based on these thresholds, implementation of the Proposed Project would have a significant adverse impact related to transportation and traffic if it would:

A. Conflict with an applicable plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

B. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

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

D. Result in inadequate emergency access.

The IS found that the Proposed Project would have less than significant impact as it relates to changes in air traffic patterns, increase in hazards due to a design feature, inadequate emergency access, and conflicts with adopted plans/policies regarding to public transit, bicycle, or pedestrian facilities (Appendix A-1). As such, these impacts will not be addressed further in this Draft PEIR/PEIS.

3.11.3.2 Approach and Methodology

Vehicles Miles Traveled for CEQA Analysis

All land development projects that are not presumed to have a less than significant transportation impact related to State CEQA Guidelines Section 15064.3, subdivision (b), according to the screening criteria provided above must conduct an analysis of the project's VMT. The VMT analysis will

determine the appropriate VMT metric, identify the appropriate threshold of significance, calculate project VMT, identify the impact significance, and recommend appropriate mitigation.

For large land use plan/ projects such as the Proposed Project, model-based approach (tour- or trip-based travel demand models) offer the best methods for assessing VMT and for comparing those assessments to VMT thresholds.

The VMT analysis in this section incorporates the data and conclusions prepared by LSA Associates, Inc (LSA), included as Appendix D of this Draft PEIR/PEIS. Based on discussion with the City staff, LSA utilized 2016 Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Travel Demand Model using the City of Long Beach General Plan updated land use information, to estimate the Proposed Project's VMT.

Accordingly, the thresholds of significance for VMT impacts are the same as for office projects (i.e., 15 percent below the existing regional average VMT per employee).

Level of Service for General Plan Consistency

The traffic impact analysis in this section incorporates the data and conclusions of the TIA prepared by LLG, included as Appendix D of this PEIR/PEIS. The traffic impact analysis evaluates potential Proposed Project-related impacts at 28 key intersections in the vicinity of the Proposed Project area. Generally, the studied intersections were selected based on the following criteria:

a. Being located immediately adjacent or in close proximity to the Plan Area;
b. Being located in the vicinity of the Plan Area that are documented to have current or projected future adverse operational issues; and
c. Being located in the vicinity of the Plan Area that are forecast to experience a relatively greater percentage of Proposed Project-related vehicular turning movements (e.g., at freeway ramp intersections).

Based on the above studied intersection criteria, the traffic impact analysis evaluates potential traffic impacts associated with the Proposed Project at study intersections per City of Long Beach, City of Signal Hill and City of Lakewood criteria.

City of Long Beach, City of Signal Hill and City of Lakewood

According to the City of Long Beach (Traffic Impact Study Guidelines 2004) and City of Signal Hill (General Plan Circulation Element Updated December 2009), LOS D is considered an acceptable level of service. The City of Lakewood utilizes LA County PW guidelines and criteria to assess traffic impacts.

Operational affects to local and regional transportation systems are considered unacceptable if:

Signalized Intersections:

- The project causes a study intersection to deteriorate from LOS D to LOS E or F. The cities of Long Beach, Signal Hill and Lakewood consider LOS D (ICU = 0.801 - 0.900) to be the minimum acceptable LOS for all intersections; or
- The project increases traffic demand at the study intersection by 2% of capacity (ICU increase ≥ 0.020), causing or worsening LOS E or F (ICU > 0.901) when an intersection is operating at LOS E or F in the baseline condition.

Unsignalized Intersections:

For unsignalized intersections, an operational affect is defined to be unacceptable if:

The project causes an intersection operating at LOS D or better to degrade to LOS E or F, and the traffic signal warrant analysis determines that a traffic signal is justified.

Los Angeles County Public Works Guidelines

The Los Angeles County PW (formerly the County of Los Angeles Department of Public Works) uses LOS to assess the congestion of roadways in the transportation system. As identified in the County's Traffic Impact Analysis Report Guidelines (County of Los Angeles Department of Public Works 2013), a project would normally have a significant impact on signalized intersection capacity if the project-related increase in the volume to capacity (v/c) ratio equals or exceeds the thresholds shown in Table 3.11-5 (County of Los Angeles Traffic Impact Guidelines Significant Impact Criteria for Intersections).

Table 3.11-5
County of Los Angeles Traffic Impact Guidelines Significant Impact Criteria for Intersections

Intersections		
Intersection Conditions without Project Traffic		
LOS	*V/C*	*Project-Related Increase in V/C Ratio*
C	0.71–0.80	≥0.04
D	0.81–0.90	≥0.02
E, F	>0.91	≥0.01

Source: County of Los Angeles 2013.
Notes: LOS = level of service; V/C = volume to capacity.

The County does not have specific criteria for assessing unsignalized intersections for traffic impacts. Similar to City of Long Beach, unsignalized intersections would be assessed by analyzing these locations for the need for traffic signals.

Caltrans Intersections

Caltrans "endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities"; it does not require that LOS "D" (shall) be maintained. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. For this analysis, LOS D is the target level of service standard and will be utilized to assess the project impacts at the state-controlled study intersections.

The Caltrans Guide for the *Preparation of Traffic Impact Studies*, dated December 2002 states that if an existing State-owned facility operates at less than the target LOS (i.e., LOS D); the existing service level should be maintained. Based on Caltrans Criteria, a project's impact is considered significant if the project causes the LOS to change from an acceptable LOS (i.e., LOS D or better) to a deficient LOS (i.e., LOS E or F).

Los Angeles County Congestion Management Plan

As required by the 2010 Congestion Management Program, a Traffic Impact Assessment (TIA) has been prepared to determine the potential impacts on designated monitoring locations on the CMP highway system. The analysis has been prepared in accordance with procedures outlined in the *2010 Congestion Management Program*, Los Angeles County Metropolitan Transportation Authority (Metro), October 2010.

According to Section D.9.1 (Appendix D, Guidelines for CMP Transportation Impact Analysis, page D-6) of the 2010 CMP manual, the criteria for determining a significant transportation impact is listed below:

> "A significant transportation impact occurs when the proposed project increases traffic demand on a CMP facility by 2% of capacity (V/C $\geq$ 0.02), causing or worsening LOS F (V/C > 1.00); if the facility is already at LOS F, a significant impact occurs when the proposed project increases traffic demand on a CMP facility by 2% of capacity (V/C $\geq$ 0.02)."

3.11.4 Impacts Analysis

a) Would the project conflict with an applicable plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Proposed Project Traffic

In order to determine potential traffic impacts of the Proposed Project, the traffic study uses a multi-step process. The first step is estimating traffic generation, which estimates the total arriving and departing traffic on a peak hour and daily basis. The traffic generation potential is estimated by applying the appropriate vehicle trip generation equations or rates to the Proposed Project development tabulation with applicable trip adjustments/credits to account for the existing land uses on site, internal capture, and/or alternative modes of transportation.

The second step of the forecasting process is determining traffic distribution, which identifies the origins and destinations of inbound and outbound Proposed Project traffic. These origins and destinations are typically based on demographics and existing/expected future travel patterns in the study area.

The third step is assigning traffic, which involves the allocation of Proposed Project traffic to study area streets and intersections.

With the forecasting process complete and Proposed Project traffic assignments developed, the impact of the Proposed Project is isolated by comparing levels of service at selected key intersections using expected future traffic volumes with and without Proposed Project-generated traffic.

To facilitate traffic forecasting for the Proposed Project, 17 Traffic Analysis Zones (TAZs) were developed by LLG. The TAZs divide the Proposed Project into zones that show existing square footage for each TAZ, existing land use types by TAZ, and future land use designations for each TAZ as contemplated in the GCSP. TAZs developed for this study due to the Proposed Project's land use designations across approximately 437 acres were used to facilitate assigning net Proposed Project-related trips to the key study intersections analyzed. Figure 3.11-10, Globemaster Corridor Specific Plan TAZ Map, illustrates the resulting TAZ map, showing the 17 TAZs that have been identified within the Plan Area.

Trip Generation

The trip generation rates for the various land use categories specified within the Plan Area were applied to the existing and future (Proposed Project) square footage for each land use by TAZ. Ttrip generation rates from the 10th Edition of *Trip Generation*, published by the Institute of Transportation Engineers (ITE) were applied to the existing and future (Proposed Project) square footage for each land use by TAZ.

To account for the "internal" trip-making characteristics among the various land uses within the City an overall, area-wide trip reduction factor of 20% was applied to gross Proposed Project-generated trips to account for internal trip, transit, and TDM trip-making characteristics inherent to the City. Additionally, because of the retail and restaurant zones, "pass-by" reductions were applied to the adjusted Proposed Project-generated trips (after application of the 20% internal/transit/TDM trip reduction factor) for corresponding uses.

For the industrial zones, the vehicle mix and enter/exit splits are based on the *City of Fontana Truck Trip Generation Study* for Manufacturing land uses and South Coast Air Quality Management for Warehousing land uses. A Passenger Car Equivalent (PCE) factor of 2.0 was then applied to the resultant truck trips, which is consistent with the information provided within the *City of Long Beach Draft Traffic Impact Analysis Guidelines*, dated June 2020.

Table 3.11-6 (Existing (2018) Project Trip Generation) summarizes a summary of the existing net trip generation estimates for the Plan Area, corresponding to 18,138 daily trips on a typical weekday, 1,462 AM peak hour trips, and 1,903 PM peak hour trips.

Table 3.11-7 (Proposed Project Trip Generation) summarizes Proposed Project "gross" trip generation, totaling 59,437 daily trips on a typical weekday, 4,023 AM peak hour trips, and 4,975 PM peak hour trips. It also indicates that, based on a comparison of Proposed Project "gross" trips against the existing trips, the "net" increase in trips attributable to the Proposed Project corresponds to 41,299 daily trips on a typical weekday, 2,561 AM peak hour trips, and 3,072 PM peak hour trips. These incremental trips were assigned to the surrounding street system and evaluated for potential operational affects during the AM and PM peak hours.

Table 3.11-6
Existing (2018) Project Trip Generation

Traffic Analysis Zones[a, b, c]	Daily (2-Way)	AM Peak Hour			PM Peak Hour		
		In	*Out*	*Total*	*In*	*Out*	*Total*
TAZ 1	2,867	109	77	186	121	147	268
TAZ 2	6,515	199	108	307	240	294	534
TAZ 3	581	38	17	55	29	40	69
TAZ 4	701	71	27	98	32	74	106
TAZ 5	255	25	11	36	12	27	39
TAZ 6	360	22	16	38	14	15	29
TAZ 7	875	27	9	36	41	60	101
TAZ 8	88	11	3	14	4	12	16
TAZ 9[d]	0	0	0	0	0	0	0
TAZ 10	0	0	0	0	0	0	0
TAZ 11	0	0	0	0	0	0	0
TAZ 12	0	0	0	0	0	0	0

Table 3.11-6
Existing (2018) Project Trip Generation

Traffic Analysis Zones[a, b, c]	Daily (2-Way)	AM Peak Hour			PM Peak Hour		
		In	*Out*	*Total*	*In*	*Out*	*Total*
TAZ 13	2,873	255	107	362	109	289	398
TAZ 14	192	6	2	8	6	16	22
TAZ 15	401	37	11	48	13	42	55
TAZ 16	973	85	41	126	46	92	138
TAZ 17	1,457	96	52	148	54	74	128
Existing Total	**18,138**	**981**	**481**	**1,462**	**721**	**1,182**	**1,903**

Notes:

[a] An internal trip reduction of 20% was applied to account for internal trips, transit use, and TDM strategies.

[b] Of the total trip generation for Manufacturing and Warehousing/Mini-warehousing, the Daily, total AM peak hour, and total PM peak hour rates are from ITE Trip Generation, 10th Edition . The vehicle mx and enter/exit splits are based on the City of Fontana Truck Trip Generation Study for Manufacturing land uses and South Coast Air Quality Management for Warehousing land uses. A Passenger Car Equivalent (PCE) factor of 2.0 was applied to truck trips.

[c] Retail Pass-by trips consist of 10%, 10%, and 34% for Daily, AM peak hour, and PM peak hour, respectively. High-turnover (Sit-down) Restaurant Pass-by trips consist of 10%, 10%, and 43% for Daily, AM peak hour, and PM peak hour, respectively. Drive-in Bank Pass-by trips consist of 10%, 29%, and 35% for Daily,AM peak hour, and PM peak hour, respectively.

[d] Existing Boeing site.

Table 3.11-7
Proposed Project Trip Generation

Traffic Analysis Zones[a,b,c]	Daily (2-Way)	AM Peak Hour			PM Peak Hour		
		In	*Out*	*Total*	*In*	*Out*	*Total*
TAZ 1							
PROJECT TAZ 1 Total:	2,692	53	36	89	77	73	150
EXISTINGTAZ 1 Total:	2,867	109	77	186	121	147	268
PROJECT Minus Existing:	(175)	(56)	(41)	(97)	(44)	(74)	(118)
TAZ 2							
PROJECT TAZ 2 Total:	6,946	215	112	327	206	270	476
EXISTINGTAZ 2 Total:	6,515	199	108	307	240	294	534
PROJECT Minus Existing:	431	16	4	20	(34)	(24)	(58)
TAZ 3							
PROJECT TAZ 3 Total:	2,748	90	63	153	75	68	143
EXISTINGTAZ 3 Total:	581	38	17	55	29	40	69
PROJECT Minus Existing:	2,167	52	46	98	46	28	74
TAZ 4							
PROJECT TAZ 4 Total:	4,033	98	58	156	99	128	227
EXISTINGTAZ 4 Total:	701	71	27	98	32	74	106
PROJECT Minus Existing:	3,332	27	31	58	67	54	121
TAZ 5							
PROJECT TAZ 5 Total:	845	32	18	50	31	49	80
EXISTINGTAZ 5 Total:	255	25	11	36	12	27	39
PROJECT Minus Existing:	590	7	7	14	19	22	41

Table 3.11-7
Proposed Project Trip Generation

Traffic Analysis Zones[a,b,c]	Daily (2-Way)	AM Peak Hour			PM Peak Hour		
		In	*Out*	*Total*	*In*	*Out*	*Total*
TAZ 6							
PROJECT TAZ 6 Total:	895	46	10	56	31	48	79
EXISTINGTAZ 6 Total:	360	22	16	38	14	15	29
PROJECT Minus Existing:	535	24	(6)	18	17	33	50
TAZ 7							
PROJECT TAZ 7 Total:	3,133	254	62	316	69	271	340
EXISTINGTAZ 7 Total:	875	27	9	36	41	60	101
PROJECT Minus Existing:	2,258	227	53	280	28	211	239
TAZ 8							
PROJECT TAZ 8 Total:	2,629	173	53	226	72	196	268
EXISTINGTAZ 8 Total:	88	11	3	14	4	12	16
PROJECT Minus Existing:	2,541	162	50	212	68	184	252
TAZ 9							
PROJECT TAZ 9 Total:	16,037	1,138	272	1,410	304	1,232	1,536
EXISTINGTAZ 9 Total:	0	0	0	0	0	0	0
PROJECT Minus Existing:	16,037	1,138	272	1,410	304	1,232	1,536
TAZ 10							
PROJECT TAZ 10 Total:	3,414	114	77	191	124	187	311
EXISTINGTAZ 10 Total:	0	0	0	0	0	0	0
PROJECT Minus Existing:	3,414	114	77	191	124	187	311
TAZ 11							
PROJECT TAZ 11 Total:	1,522	43	28	71	45	66	111
EXISTINGTAZ 11 Total:	0	0	0	0	0	0	0
PROJECT Minus Existing:	1,522	43	28	71	45	66	111
TAZ 12							
PROJECT TAZ 12 Total:	4,292	199	135	334	153	253	406
EXISTINGTAZ 12 Total:	0	0	0	0	0	0	0
PROJECT Minus Existing:	4,292	199	135	334	153	253	406
TAZ 13							
PROJECT TAZ 13 Total:	2,768	151	85	236	96	168	264
EXISTINGTAZ 13 Total:	2,873	255	107	362	109	289	398
PROJECT Minus Existing:	(105)	(104)	(22)	(126)	(13)	(121)	(134)
TAZ 14							
PROJECT TAZ 14 Total:	1,663	66	38	104	63	100	163
EXISTINGTAZ 14 Total:	192	6	2	8	6	16	22
PROJECT Minus Existing:	1,471	60	36	96	57	84	141
TAZ 15							
PROJECT TAZ 15 Total:	2,182	97	50	147	84	139	223
EXISTINGTAZ 15 Total:	401	37	11	48	13	42	55

Table 3.11-7
Proposed Project Trip Generation

Traffic Analysis Zones[a,b,c]	Daily (2-Way)	AM Peak Hour			PM Peak Hour		
		In	*Out*	*Total*	*In*	*Out*	*Total*
PROJECT Minus Existing:	1,781	60	39	99	71	97	168
TAZ 16							
PROJECT TAZ 16 Total:	2,249	66	46	112	62	75	137
EXISTINGTAZ 16 Total:	973	85	41	126	46	92	138
PROJECT Minus Existing:	1,276	(19)	5	(14)	16	(17)	(1)
TAZ 17							
PROJECT TAZ 17 Total:	1,389	28	17	45	28	33	61
EXISTINGTAZ 17 Total:	1,457	96	52	148	54	74	128
PROJECT Minus Existing:	(68)	(68)	(35)	(103)	(26)	(41)	(67)
PROJECT TOTAL (7,011,195 SF)	***59,437***	***2,863***	***1,160***	***4,023***	***1,619***	***3,356***	***4,975***
EXISTING TOTAL (2,094,175 SF)[d]	***18,138***	***981***	***481***	***1,462***	***721***	***1,182***	***1,903***
PROJECT TOTAL MINUS EXISTING TOTAL (4,107,020 SF NET INCREASE)	*41,299*	*1,882*	*679*	*2,561*	*898*	*2,174*	*3,072*

Notes:

[a] An internal trip reduction of 20% was applied to account for internal trips, transit use, and TDM strategies.

[b] Of the total trip generation for Manufacturing and Warehousing/Mini-warehousing, the Daily, total AM peak hour, and total PM peak hour rates are from ITE Trip Generation, 10th Edition . The vehicle mx and enter/exit splits are based on the City of Fontana Truck Trip Generation Study for Manufacturing land uses and South Coast Air Quality Management for Warehousing land uses. A Passenger Car Equivalent (PCE) factor of 2.0 was applied to truck trips.

[c] Retail Pass-by trips consist of 10%, 10%, and 34% for Daily, AM peak hour, and PM peak hour, respectively.
High-turnover (Sit-down) Restaurant Pass-by trips consist of 10%, 10%, and 43% for Daily, AM peak hour, and PM peak hour, respectively.
Fast Casual and Fast-Food Restaurant with Drive-through window Pass-by trips consist of 25%, 49%, and 50% for Daily, AM peak hour, and PM peak hour, respectively. Quality Restaurant Pass-by trips consist of 10%, 10%, and 44% for Daily, AM peak hour, and PM peak hour, respectively.

[d] Existing square footage total reported excludes 1,409,441 SF of existing vacant industrial uses located within TAZ 9 (Boeing Site).

Trip Distribution and Assignment

The geographic distribution of traffic generated by developments is dependent upon the project's market/service area, location of site access points in relation to the surrounding street system, location of parking areas, and ingress/egress availability at the parking areas, the site's proximity to major traffic carriers and regional access routes, and physical characteristics of the circulation system such as lane channelization and presence of traffic signals that affect travel patterns presence of traffic congestion in the surrounding vicinity.

Select zone assignments from the Year 2040 SCAG traffic model, provided by LSA Associates, was used as a starting point, and further refined to reflect the factors listed above. Based on these considerations, two overall traffic distribution patterns, one for passenger cars and one for trucks, were developed for this study. Figure 3.11-11A, Project Trip Distribution Pattern (Passenger Cars), illustrates the overall passenger car traffic distribution pattern developed for the Proposed Project.

Figure 3.11-11B, Project Trip Distribution Pattern (Trucks), illustrates the overall truck traffic distribution pattern developed for the Proposed Project.

The traffic expected to be generated by the Proposed Project was assigned to the local street network using the net trip generation estimates summarized in Table 3.11-5 and the area-wide distribution pattern illustrated in Figure 3.11-11A and Figure 3.11-11B. Figure 3.11-12, AM Peak Hour Project Only Traffic Volumes, and Figure 3.11-13, PM Peak Hour Project Only Traffic Volumes, illustrates the anticipated AM and PM peak hour traffic volumes associated with the Proposed Project, respectively.

Existing Plus Project

The Existing (2018) Plus Project analysis adds Proposed Project-generated forecasts to existing conditions. Figure 3.11-14, Existing (Year 2018) Plus Project AM Peak Hour Traffic Volumes, and Figure 3.11-15, Existing (Year 2018) Plus Project PM Peak Hour Traffic Volumes, present the Existing (2018) Plus Project traffic volumes at the 28 key intersections for the weekday AM and PM peak hours, respectively.

Table 3.11-8 (Existing (2018) Plus Project Intersection Peak Hour Levels of Service) summarizes the peak hour Level of Service results at the 28 key study intersections for Existing (2018) Plus Project traffic conditions. As shown in Table 3.11-8, six (6) of the key study intersections are forecast to operate adversely with the addition of Proposed Project traffic.

As Table 3.11-8 indicates, based on the applicable criteria for determining operational affects, at full buildout under Existing (2018) conditions, the Proposed Project is anticipated to result in an operational deficiency at the following study signalized intersections:

1 Cherry Avenue at Carson Street (Long Beach): LOS D degrades to LOS E in PM peak hour and the project causes a ≥0.02 V/C increase at LOS E in PM peak hour

3 Cherry Avenue at Cover Street (Long Beach/Lakewood): LOS C degrades to LOS F in PM peak hour and the project causes a ≥0.02 V/C increase at LOS F in PM peak hour

5 Cherry Avenue at 36th Street (Long Beach/Lakewood): LOS C degrades to LOS E in PM peak hour and the project causes a ≥0.02 V/C increase at LOS E in PM peak hour

7 Cherry Avenue at Wardlow Road (Long Beach): LOS C and D in AM and PM peak hour degrades to LOS F and the project causes a ≥0.02 V/C increase at LOS F in AM and PM peak hour

9 Orange Avenue at 32nd Street (Signal Hill): LOS D degrades to LOS E in PM peak hour and the project causes a ≥0.02 V/C increase at LOS E in PM peak hour

11 Orange Avenue at I-405 Southbound Ramps (Long Beach/Caltrans): Operates at LOS F in AM and PM peak hour with and without project. This is an unsignalized intersection and

if the project causes an intersection at LOS D or better to degrade to LOS E or F, and the traffic signal warrant analysis determines that a signal is justified.

As mentioned above, five (5) of the intersections operating adversely are considered unacceptable when compared to the LOS standards. Figure 3.11-16, Existing (2018) Deficient LOS Summary, and Figure 3.11-17, Existing (2018) + Project Deficient LOS Summary, illustrates the deficient location under Existing (2018) conditions and the deficient locations under Existing (2018) Plus Project traffic conditions, respectively. Table 3.11-8 (Existing (2018) Plus Project Intersection Peak Hour Levels of Service) indicates that the implementation of potential mitigation measures at the intersections will improve the LOS to acceptable conditions. Mitigation measures (**MM-TRAF-1** to **MM-TRAF-5**) are described in Section 3.11.6.

Although the intersection of Orange Avenue/I-405 southbound ramps is forecast to operate at unacceptable LOS F in the AM and PM peak hour, the intersection is not considered affected when compared to the LOS standards utilized by City of Long Beach, which specifies that an unsignalized intersection impact is considered to be significant if the project causes an intersection at LOS D or better to degrade to LOS E or F. Also, preliminary review of the existing volumes indicate that the intersection satisfies the criteria for the installation of a traffic signal. Should Caltrans or the City of Long Beach desire to install a traffic signal at this location, the Proposed Project may be expected to pay a fair-share of the total cost.

Year 2040 Baseline Plus Project

The Year 2040 Baseline Plus Project analysis adds project-generated forecasts to Year 2040 Baseline conditions. Figure 3.11-18, Year 2040 Plus Project AM Peak Hour Traffic Volumes, and Figure 3.11-19, Year 2040 Baseline Plus Project PM Peak Hour Traffic Volumes, present the Year 2040 Baseline Plus Project traffic volumes at the 28 key intersections for the weekday AM and PM peak hours, respectively.

Table 3.11-9 (Year 2040 Plus Project Intersection Peak Hour Levels of Service) summarizes the peak hour Level of Service results at the 28 key study intersections for the Year 2040 Baseline Plus Project traffic conditions. As shown in Table 3.11-9, ten (10) of the key study intersections are forecast to operate adversely with the addition of Project traffic.

As Table 3.11-9 indicates, based on the applicable criteria for determining traffic affects, at full buildout under Year 2040 Baseline conditions, the Proposed Project is anticipated to result in an operational deficiency at the following study signalized intersections:

1 Cherry Avenue at Carson Street (Long Beach): LOS D degrades to LOS E in PM peak hour and the project causes a ≥0.02 V/C increase at LOS E in PM peak hour

3 Cherry Avenue at Cover Street (Long Beach/Lakewood): LOS D degrades to LOS F in PM peak hour and the project causes a ≥0.02 V/C increase at LOS F in PM peak hour

5 Cherry Avenue at 36th Street (Long Beach/Lakewood): LOS C degrades to LOS F in PM peak hour and the project causes a ≥0.02 V/C increase at LOS F in PM peak hour

7 Cherry Avenue at Wardlow Road (Long Beach): LOS C and D degrades to LOS F and the project causes a ≥0.02 V/C increase at LOS F in AM and PM peak hour

9 Orange Avenue at 32nd Street (Signal Hill): LOS D degrades to LOS E in PM peak hour and the project causes a ≥0.02 V/C increase at LOS E in PM peak hour

12 Atlantic Avenue at Spring Street (Signal Hill/Long Beach): LOS D degrades to LOS E in PM peak hour and the project causes a ≥0.02 V/C increase at LOS E in AM and PM peak hour

15 Orange Avenue at Spring Street (Signal Hill/Long Beach): LOS D and E degrades to LOS E and the project causes a ≥0.02 V/C increase at LOS E in AM and PM peak hours.

19 Temple Avenue at Spring Street (Long Beach): LOS D degrades to LOS E in AM and PM peak hour and the project causes a ≥0.02 V/C increase at LOS E in AM and PM peak hour

21 Redondo Avenue at Spring Street (Long Beach): LOS E degrades to LOS F in PM peak hour and the project causes a ≥0.02 V/C increase at LOS F in PM peak hour

26 Orange Avenue at Willow Street (Signal Hill/Long Beach): continues to operate at LOS E in PM peak hour and the project causes a ≥0.02 V/C increase at LOS E in PM peak hour

All ten (10) of the intersections operating adversely are considered affected when compared to the LOS standards utilized by City of Long Beach. Figure 3.11-20, Year 2040 Deficient LOS Summary, and Figure 3.11-21, Year 2040 + Project Deficient LOS Summary, illustrate the deficient location under Year 2040 Baseline conditions and the deficient locations under Year 2040 Plus Project traffic conditions, respectively. Table 3.11-9 (Year 2040 Plus Project Intersection Peak Hour Levels of Service) shows that the implementation of recommended mitigations at the deficient intersections will completely offset the Proposed Project's affect and improve the LOS to acceptable conditions. Mitigation measures **(MM-TRAF-5** to **MM-TRAF-13)** are described in Section 3.11.6.

Although the intersection of Orange Avenue/I-405 southbound ramps is forecast to operate at unacceptable LOS F in the AM and PM peak hour, the intersection is not considered affected when compared to the LOS standards utilized by City of Long Beach, which specifies that an operational deficiency occurs if the project causes an intersection at LOS D or better to degrade to LOS E or F. Since the study intersection currently operates at an adverse LOS under existing traffic conditions, the Proposed Project's affect is not considered to be adverse or unacceptable. Although this intersection is not considered significantly impacted, it does operate adversely under existing traffic conditions. Also, preliminary review of the existing volumes indicate that the intersection satisfies the criteria for the installation of a traffic signal. Should Caltrans or the City of Long Beach desire to install a traffic signal at this location, future development under the Proposed Project may be expected to pay a fair-share of the total cost.

Table 3.11-8
Existing (2018) Plus Project Intersection Peak Hour Levels of Service

#	Key Intersection	Time Period	(1) Existing (Year 2018)				(2) Existing plus Project (Year 2018)					(3) Existing plus Project (Year 2018) With Potential Improvement Measures			
			ICU	*Delay (s/v)*	*LOS*	*Deficient?*	*ICU*	*Delay (s/v)*	*LOS*	*ICU or Delay Change (2) - (1)*	*Significant Impact?*	*ICU*	*Delay (s/v)*	*LOS*	*ICU or Delay Change (3) - (2)*
1	**Cherry Avenue at Carson Street (Long Beach)**	AM	0.706	--	C	No	0.852	--	D	0.146	No	0.852	--	D	0.000
		PM	0.807	--	D	No	**0.958**	--	**E**	**0.151**	**Yes**	0.900	--	D	-0.058
2	Shopping Center at Carson Street (Long Beach)	AM	0.401	--	A	No	0.401	--	A	0.000	No	--	--	--	--
		PM	0.609	--	B	No	0.600	--	B	-0.009	No	--	--	--	--
3	**Cherry Avenue at Cover Street (Long Beach/Lakewood)**	AM	0.544	--	A	No	0.693	--	B	0.149	No	0.693	--	B	0.000
		PM	0.790	--	C	No	**1.040**	--	**F**	**0.250**	**Yes**	0.893	--	D	-0.147
4	Cherry Avenue at Bixby Road (Long Beach/Lakewood)	AM	0.602	--	B	No	0.752	--	C	0.150	No	--	--	--	--
		PM	0.625	--	B	No	0.791	--	C	0.166	No	--	--	--	--
5	**Cherry Avenue at 36th Street (Long Beach/Lakewood)**	AM	0.640	--	B	No	0.766	--	C	0.126	No	0.750	--	C	-0.016
		PM	0.748	--	C	No	**0.983**	--	**E**	**0.235**	**Yes**	0.881	--	D	-0.102
6	Industry Avenue at 36th Street (Lakewood)	AM	0.369	--	A	No	0.516	--	A	0.147	No	--	--	--	--
		PM	0.513	--	A	No	0.741	--	C	0.228	No	--	--	--	--
7	**Cherry Avenue at Wardlow Road (Long Beach)**	AM	0.766	--	C	No	**1.116**	--	**F**	**0.350**	**Yes**	0.832	--	D	-0.284
		PM	0.857	--	D	No	**1.294**	--	**F**	**0.437**	**Yes**	0.854	--	D	-0.440
8	Boeing at Wardlow Road (Long Beach)	AM	0.117	--	A	No	0.495	--	A	0.378	No	--	--	--	--
		PM	0.114	--	A	No	0.500	--	A	0.386	No	--	--	--	--
9	**Orange Avenue at 32nd Street (Signal Hill)**	AM	0.719	--	C	No	0.754	--	C	0.035	No	0.657	--	B	-0.097
		PM	0.856	--	D	No	**0.925**	--	**E**	**0.069**	**Yes**	0.724	--	C	-0.201
10	I-405 Northbound Ramps at 32nd Street (Signal Hill/Caltrans)	AM	--	11.2	B	No	--	11.6	B	0.4	No	--	--	--	--
		PM	--	19.7	C	No	--	24.7	C	5.0	No	--	--	--	--
11	**Orange Avenue at I-405 Southbound Ramps (Long Beach/Caltrans)**	AM	--	**94.9**	**F**	**Yes**	--	**126.8**	**F**	**31.9**	No [a]	--	--	--	--
		PM	--	**188.0**	**F**	**Yes**	--	**321.5**	**F**	**133.5**	No [a]	--	--	--	--
12	Atlantic Avenue at Spring Street (Signal Hill/Long Beach)	AM	0.732	--	C	No	0.818	--	D	0.086	No	--	--	--	--
		PM	0.828	--	D	No	0.854	--	D	0.026	No	--	--	--	--
13	Olive Avenue at Spring Street (Signal Hill)	AM	0.454	--	A	No	0.459	--	A	0.005	No	--	--	--	--
		PM	0.519	--	A	No	0.532	--	A	0.013	No	--	--	--	--
14	California Avenue at Spring Street (Signal Hill/Long Beach)	AM	0.590	--	A	No	0.595	--	A	0.005	No	--	--	--	--
		PM	0.714	--	C	No	0.722	--	C	0.008	No	--	--	--	--
15	Orange Avenue at Spring Street (Signal Hill/Long Beach)	AM	0.826	--	D	No	0.860	--	D	0.034	No	--	--	--	--
		PM	0.833	--	D	No	0.876	--	D	0.043	No	--	--	--	--
16	Walnut Avenue at Spring Street (Signal Hill/Long Beach)	AM	0.584	--	A	No	0.596	--	A	0.012	No	--	--	--	--
		PM	0.717	--	C	No	0.736	--	C	0.019	No	--	--	--	--
17	Cherry Avenue at Spring Street (Signal Hill/Long Beach)	AM	0.690	--	B	No	0.797	--	C	0.107	No	--	--	--	--
		PM	0.738	--	C	No	0.806	--	D	0.068	No	--	--	--	--
18	I-405 Southbound Off-Ramp at Spring Street (Signal Hill/Long Beach/Caltrans)	AM	0.732	--	C	No	0.765	--	C	0.033	No	--	--	--	--
		PM	0.719	--	C	No	0.764	--	C	0.045	No	--	--	--	--

Table 3.11-8
Existing (2018) Plus Project Intersection Peak Hour Levels of Service

#	Key Intersection	Time Period	(1) Existing (Year 2018)				(2) Existing plus Project (Year 2018)					(3) Existing plus Project (Year 2018) With Potential Improvement Measures			
			ICU	*Delay (s/v)*	*LOS*	*Deficient?*	*ICU*	*Delay (s/v)*	*LOS*	*ICU or Delay Change (2) - (1)*	*Significant Impact?*	*ICU*	*Delay (s/v)*	*LOS*	*ICU or Delay Change (3) - (2)*
19	Temple Avenue at Spring Street (Long Beach)	AM	0.644	--	B	No	0.704	--	C	0.060	No	--	--	--	--
		PM	0.668	--	B	No	0.729	--	C	0.061	No	--	--	--	--
20	Temple Avenue at I-405 Northbound Off-Ramp (Long Beach/Caltrans)	AM	0.375	--	A	No	0.389	--	A	0.014	No	--	--	--	--
		PM	0.458	--	A	No	0.468	--	A	0.010	No	--	--	--	--
21	Redondo Avenue at Spring Street (Long Beach)	AM	0.631	--	B	No	0.657	--	B	0.026	No	--	--	--	--
		PM	0.720	--	C	No	0.765	--	C	0.045	No	--	--	--	--
22	Kilroy Airport Way at Spring Street (Long Beach)	AM	0.612	--	B	No	0.637	--	B	0.025	No	--	--	--	--
		PM	0.815	--	D	No	0.847	--	D	0.032	No	--	--	--	--
23	Lakewood Boulevard at Spring Street (Long Beach)	AM	0.818	--	D	No	0.838	--	D	0.020	No	--	--	--	--
		PM	0.849	--	D	No	0.857	--	D	0.008	No	--	--	--	--
24	Orange Avenue at 29th Street (Signal Hill/Long Beach)	AM	--	14.5	B	No	--	14.9	B	0.4	No	--	--	--	--
		PM	--	14.9	B	No	--	15.4	C	0.5	No	--	--	--	--
25	California Avenue at Willow Street (Signal Hill/Long Beach)	AM	0.613	--	B	No	0.621	--	B	0.008	No	--	--	--	--
		PM	0.593	--	A	No	0.604	--	B	0.011	No	--	--	--	--
26	Orange Avenue at Willow Street (Signal Hill/Long Beach)	AM	0.736	--	C	No	0.756	--	C	0.020	No	--	--	--	--
		PM	0.845	--	D	No	0.866	--	D	0.021	No	--	--	--	--
27	Walnut Avenue at Willow Street (Signal Hill)	AM	0.510	--	A	No	0.521	--	A	0.011	No	--	--	--	--
		PM	0.617	--	B	No	0.629	--	B	0.012	No	--	--	--	--
28	Cherry Avenue at Willow Street (Signal Hill)	AM	0.687	--	B	No	0.758	--	C	0.071	No	--	--	--	--
		PM	0.818	--	D	No	0.868	--	D	0.050	No	--	--	--	--

Notes:
LOS= Level of Service, please refer to *Tables 1* and *2* for the LOS definitions
ICU= Intersection Capacity Utilization
s/v= seconds per vehicle (delay)
= Deficient LOS based on City's LOS standards.
= Deficient LOS and Significant Impact based on City's LOS standards.
[a] An unsignalized intersection impact is considered to be significant if the project causes an intersection at LOS D or better to degrade to LOS E or F, and the traffic signal warrant analysis determines that a signal is justified.

Table 3.11-9
Year 2040 Plus Project Intersection Peak Hour Levels Of Service

#	Key Intersection	Time Period	(1) Existing (Year 2018)				(2) Year 2040 Baseline				(3) Year 2040 plus Project					(4) Year 2040 plus Project With Potential Improvement Measures			
			ICU	*Delay (s/v)*	*LOS*	*Deficient?*	*ICU*	*Delay (s/v)*	*LOS*	*Deficient?*	*ICU*	*Delay (s/v)*	*LOS*	*ICU or Delay Change (3) - (2)*	*Significant Impact?*	*ICU*	*Delay (s/v)*	*LOS*	*ICU or Delay Change (4) - (3)*
1	**Cherry Avenue at Carson Street (Long Beach)**	AM	0.706	--	C	No	0.731	--	C	No	0.877	--	D	0.146	No	0.839	--	D	-0.038
		PM	0.807	--	D	No	0.837	--	D	No	**0.988**	--	**E**	**0.151**	**Yes**	0.863	--	D	-0.125
2	Shopping Center at Carson Street (Long Beach)	AM	0.401	--	A	No	0.417	--	A	No	0.418	--	A	0.001	No	--	--	--	--
		PM	0.609	--	B	No	0.630	--	B	No	0.621	--	B	-0.009	No	--	--	--	--
3	**Cherry Avenue at Cover Street (Long Beach/Lakewood)**	AM	0.544	--	A	No	0.566	--	A	No	0.715	--	C	0.149	No	0.715	--	C	0.000
		PM	0.790	--	C	No	0.822	--	D	No	**1.072**	--	**F**	**0.250**	**Yes**	0.815	--	D	-0.257
4	Cherry Avenue at Bixby Road (Long Beach/Lakewood)	AM	0.602	--	B	No	0.628	--	B	No	0.778	--	C	0.150	No	--	--	--	--
		PM	0.625	--	B	No	0.651	--	B	No	0.818	--	D	0.167	No	--	--	--	--
5	**Cherry Avenue at 36th Street (Long Beach/Lakewood)**	AM	0.640	--	B	No	0.666	--	B	No	0.792	--	C	0.126	No	0.776	--	C	-0.016
		PM	0.748	--	C	No	0.774	--	C	No	**1.009**	--	**F**	**0.235**	**Yes**	0.889	--	D	-0.120
6	Industry Avenue at 36th Street (Lakewood)	AM	0.369	--	A	No	0.369	--	A	No	0.516	--	A	0.147	No	--	--	--	--
		PM	0.513	--	A	No	0.513	--	A	No	0.741	--	C	0.228	No	--	--	--	--
7	**Cherry Avenue at Wardlow Road (Long Beach)**	AM	0.766	--	C	No	0.792	--	C	No	**1.141**	--	**F**	**0.349**	**Yes**	0.845	--	D	-0.296
		PM	0.857	--	D	No	0.891	--	D	No	**1.329**	--	**F**	**0.438**	**Yes**	0.871	--	D	-0.458
8	Boeing at Wardlow Road (Long Beach)	AM	0.117	--	A	No	0.117	--	A	No	0.495	--	A	0.378	No	--	--	--	--
		PM	0.114	--	A	No	0.114	--	A	No	0.500	--	A	0.386	No	--	--	--	--
9	**Orange Avenue at 32nd Street (Signal Hill)**	AM	0.719	--	C	No	0.735	--	C	No	0.770	--	C	0.035	No	0.685	--	B	-0.085
		PM	0.856	--	D	No	0.879	--	D	No	**0.949**	--	**E**	**0.070**	**Yes**	0.748	--	C	-0.201
10	I-405 Northbound Ramps at 32nd Street (Signal Hill/Caltrans)	AM	--	11.2	B	No	--	11.5	B	No	--	11.9	B	0.4	No	--	--	--	--
		PM	--	19.7	C	No	--	22.6	C	No	--	29.9	D	7.3	No	--	--	--	--
11	**Orange Avenue at I-405 Southbound Ramps (Long Beach/Caltrans) [a]**	AM	--	**94.9**	**F**	**Yes**	0.644	**--**	B	No	0.681	**--**	B	0.037	No	--	--	--	--
		PM	--	**188.0**	**F**	**Yes**	0.556	**--**	A	No	0.601	**--**	B	0.045	No	--	--	--	--
12	**Atlantic Avenue at Spring Street (Signal Hill/Long Beach) [a]**	AM	0.732	--	C	No	0.799	--	C	No	0.883	--	D	0.084	No	0.801	--	D	-0.082
		PM	0.828	--	D	No	0.872	--	D	No	**0.910**	--	**E**	**0.038**	**Yes**	0.826	--	D	-0.084
13	Olive Avenue at Spring Street (Signal Hill)	AM	0.454	--	A	No	0.473	--	A	No	0.478	--	A	0.005	No	--	--	--	--
		PM	0.519	--	A	No	0.535	--	A	No	0.547	--	A	0.012	No	--	--	--	--
14	California Avenue at Spring Street (Signal Hill/Long Beach) [a]	AM	0.590	--	A	No	0.637	--	B	No	0.642	--	B	0.005	No	--	--	--	--
		PM	0.714	--	C	No	0.746	--	C	No	0.753	--	C	0.007	No	--	--	--	--
15	**Orange Avenue at Spring Street (Signal Hill/Long Beach) [a]**	AM	0.826	--	D	No	0.891	--	D	No	**0.912**	--	**E**	**0.021**	**Yes**	0.747	--	C	-0.165
		PM	0.833	--	D	No	**0.936**	--	**E**	**Yes**	**0.977**	--	**E**	**0.041**	**Yes**	0.789	--	C	-0.188
16	Walnut Avenue at Spring Street (Signal Hill/Long Beach)	AM	0.584	--	A	No	0.603	--	B	No	0.615	--	B	0.012	No	--	--	--	--
		PM	0.717	--	C	No	0.737	--	C	No	0.756	--	C	0.019	No	--	--	--	--
17	Cherry Avenue at Spring Street (Signal Hill/Long Beach)	AM	0.690	--	B	No	0.719	--	C	No	0.823	--	D	0.104	No	--	--	--	--
		PM	0.738	--	C	No	0.769	--	C	No	0.836	--	D	0.067	No	--	--	--	--
18	I-405 Southbound Off-Ramp at Spring Street (Signal Hill/Long Beach/Caltrans)	AM	0.732	--	C	No	0.773	--	C	No	0.806	--	D	0.033	No	--	--	--	--
		PM	0.719	--	C	No	0.759	--	C	No	0.804	--	D	0.045	No	--	--	--	--

Table 3.11-9
Year 2040 Plus Project Intersection Peak Hour Levels Of Service

#	Key Intersection	Time Period	(1) Existing (Year 2018)				(2) Year 2040 Baseline				(3) Year 2040 plus Project					(4) Year 2040 plus Project With Potential Improvement Measures			
			ICU	*Delay (s/v)*	*LOS*	*Deficient?*	*ICU*	*Delay (s/v)*	*LOS*	*Deficient?*	*ICU*	*Delay (s/v)*	*LOS*	*ICU or Delay Change (3) - (2)*	*Significant Impact?*	*ICU*	*Delay (s/v)*	*LOS*	*ICU or Delay Change (4) - (3)*
19	**Temple Avenue at Spring Street (Long Beach) [a]**	AM	0.644	--	B	No	0.869	--	D	No	**0.940**	--	**E**	**0.071**	**Yes**	0.729	--	C	-0.211
		PM	0.668	--	B	No	0.874	--	D	No	**0.947**	--	**E**	**0.073**	**Yes**	0.873	--	D	-0.074
20	Temple Avenue at I-405 Northbound Off-Ramp (Long Beach/Caltrans)	AM	0.375	--	A	No	0.393	--	A	No	0.407	--	A	0.014	No	--	--	--	--
		PM	0.458	--	A	No	0.481	--	A	No	0.491	--	A	0.010	No	--	--	--	--
21	**Redondo Avenue at Spring Street (Long Beach) [a]**	AM	0.631	--	B	No	0.833	--	D	No	0.862	--	D	0.029	No	0.826	--	D	-0.036
		PM	0.720	--	C	No	**0.979**	--	**E**	**Yes**	**1.033**	--	**F**	**0.054**	**Yes**	0.848	--	D	-0.185
22	Kilroy Airport Way at Spring Street (Long Beach)	AM	0.612	--	B	No	0.645	--	B	No	0.670	--	B	0.025	No	--	--	--	--
		PM	0.815	--	D	No	0.849	--	D	No	0.881	--	D	0.032	No	--	--	--	--
23	Lakewood Boulevard at Spring Street (Long Beach)	AM	0.818	--	D	No	0.855	--	D	No	0.875	--	D	0.020	No	--	--	--	--
		PM	0.849	--	D	No	0.875	--	D	No	0.896	--	D	0.021	No	--	--	--	--
24	Orange Avenue at 29th Street (Signal Hill/Long Beach)	AM	--	14.5	B	No	--	15.3	C	No	--	15.7	C	0.4	No	--	--	--	--
		PM	--	14.9	B	No	--	15.7	C	No	--	16.2	C	0.5	No	--	--	--	--
25	California Avenue at Willow Street (Signal Hill/Long Beach)	AM	0.613	--	B	No	0.630	--	B	No	0.639	--	B	0.009	No	--	--	--	--
		PM	0.593	--	A	No	0.613	--	B	No	0.624	--	B	0.011	No	--	--	--	--
26	**Orange Avenue at Willow Street (Signal Hill/Long Beach) [a]**	AM	0.736	--	C	No	0.820	--	D	No	0.844	--	D	0.024	No	0.661	--	B	-0.183
		PM	0.845	--	D	No	**0.928**	--	**E**	**Yes**	**0.958**	--	**E**	**0.030**	**Yes**	0.751	--	C	-0.207
27	Walnut Avenue at Willow Street (Signal Hill)	AM	0.510	--	A	No	0.526	--	A	No	0.537	--	A	0.011	No	--	--	--	--
		PM	0.617	--	B	No	0.636	--	B	No	0.648	--	B	0.012	No	--	--	--	--
28	Cherry Avenue at Willow Street (Signal Hill)	AM	0.687	--	B	No	0.717	--	C	No	0.788	--	C	0.071	No	--	--	--	--
		PM	0.818	--	D	No	0.849	--	D	No	0.899	--	D	0.050	No	--	--	--	--

Notes:
LOS= Level of Service, please refer to *Tables 1* and *2* for the LOS definitions
ICU= Intersection Capacity Utilization
s/v= seconds per vehicle (delay)
= Deficient LOS based on City's LOS standards.
= Deficient LOS and Significant Impact based on City's LOS standards.
[a] Based on direction from City staff, the City of Long Beach has planned improvements which include a signalized intersection at Orange Avenue/I-405 Southbound Ramps and protected bikeway facilities along Orange Avenue and Spring Street, which reduces intersection capacity at the intersections of Atlantic Ave/Spring St, California Ave/Spring St, Orange Ave/Spring St, Temple Ave/Spring St, Redondo Ave/Spring St and Orange Ave/Willow St. These planned improvements have been assumed under Year 2040 Baseline and Year 2040 Plus Project traffic conditions.

CEQA Impact Determination

With the implementation of mitigation measures **MM-TRAF-1** through **MM-TRAF-13,** the impacts identified in the 2018 and 2040 conditions would be reduced to less than significant. These mitigation measures are described in detail in Section 3.11.6 and include a range of improvements that directly target improving LOS. A number of these improvements include the acquisition of additional public right-of-way and/or improvements under a separate jurisdiction's authority. As discussed further in Section 3.11.6, the identified mitigation would not be feasible and the identified impacts at the 5 key intersections under the 2018 condition and 10 key intersections under the 2040 condition would be **significant and unavoidable** under CEQA.

NEPA Impact Determination

With the implementation of mitigation measures **MM-TRAF-1** through **MM-TRAF-13,** the impacts identified in the 2018 and 2040 conditions would be reduced. These mitigation measures are described in detail in Section 3.11.6 and include a range of improvements that directly target improving LOS. A number of these improvements include the acquisition of additional public right-of-way and/or improvements under a separate jurisdiction's authority. As discussed further in Section 3.11.6, the identified mitigation would not be feasible and the identified impacts at the 5 key intersections under the 2018 condition and 10 key intersections under the 2040 condition would result in an **adverse effect** under NEPA.

Caltrans Facility Analysis

In conformance with the current Caltrans *Guide for the Preparation of Traffic Impact Studies, dated December 2002*, existing and projected peak hour operating conditions at the four (4) state-controlled study intersections within the study area have been evaluated using the *Highway Capacity Manual* operations method of analysis. These state-controlled locations include the following study intersections:

10 I-405 Northbound Ramps at 32nd Street

11 Orange Avenue at I-405 Southbound Ramps

18 I-405 Southbound Off-Ramp at Spring Street

20 Temple Avenue at I-405 Northbound Off-Ramp

Based on Caltrans Criteria, a project's effect is considered unacceptable if the project causes the LOS to change from an acceptable LOS (i.e., LOS D or better) to a deficient LOS (i.e., LOS E or F).

Existing Plus Project

Table 3.11-10 (Existing (2018) Plus Project Intersection Peak Hour Levels of Service - Caltrans) summarizes the peak hour LOS results at the four (4) state-controlled study intersections for Existing Plus Project traffic conditions. The intersection of Orange Avenue/I-405 southbound ramps currently operates at unacceptable LOS F in the AM and PM peak hour.

As Table 3.11-10 indicates, based on the applicable criteria for determining traffic affects, at full buildout under Existing 2018 conditions, the Proposed Project is anticipated to operate at unacceptable LOS at the following study signalized intersection:

11 Orange Avenue/I-405 southbound ramps intersection - Operates at LOS F in the AM and PM peak hour;

Although the intersection of Orange Avenue/I-405 southbound ramps is forecast to operate at unacceptable LOS F in the AM and PM peak hours, the intersection is not considered affected when compared to the LOS standards and criteria of the City of Long Beach, which specifies that an unsignalized intersection impact is considered to be significant if the project causes an intersection at LOS D or better to degrade to LOS E or F. Although this intersection is not considered affected, it does operate adversely under existing traffic conditions. Also, preliminary review of the existing volumes indicate that the intersection satisfies the criteria for the installation of a traffic signal. Should Caltrans or the City of Long Beach desire to install a traffic signal at this location, future development under the Proposed Project may be expected to pay a fair-share of the total cost.

CEQA Impact Determination

With the implementation of mitigation measure **MM-TRAF-9,** the impact at the I-405 freeway southbound off-ramp/Spring Street intersection would be **less than significant** under CEQA.

NEPA Impact Determination

With the implementation of mitigation measure **MM-TRAF-14,** I-405 freeway southbound off-ramp/Spring Street intersection would result in **no adverse effect** under NEPA.

Year 2040 Plus Project

Table 3.11-11 (Year 2040 Plus Project Intersection Peak Hour Levels of Service - Caltrans) summarizes the peak hour LOS results at the four (4) state-controlled study intersections for Year 2040 Plus Project traffic conditions. The intersection of Orange Avenue/I-405 southbound ramps operates at unacceptable LOS F in the AM and PM peak hour under Year 2040 Baseline conditions. As Table 3.11-11 indicates, based on the applicable criteria for determining significant

traffic impacts, at full buildout under Year 2040 conditions, the Proposed Project is anticipated to result in a significant impact without improvement measures at the following study signalized intersection:

18 I-405 southbound off-ramp/ Spring Street - Operates at LOS E in the AM peak hour

The implementation of recommended mitigation measures **MM-TRAF-9** and **MM-TRAF-14** (described under Section 3.11.6) at this location will completely offset the Proposed Project's impact and improve the LOS to acceptable conditions

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Table 3.11-10
Existing (2018) Plus Project Intersection Peak Hour Levels of Service - Caltrans

#	Key Intersection	Time Period	(1) Existing (Year 2018)			(2) Existing plus Project (Year 2018)				(3) Existing plus Project (Year 2018) With Potential Improvement Measures		
			Delay (s/v)	*LOS*	*Deficient?*	*Delay (s/v)*	*LOS*	*ICU or Delay Change (2) - (1)*	*Significant Impact?*	*Delay (s/v)*	*LOS*	*ICU or Delay Change (3) - (2)*
10	I-405 Northbound Ramps at 32nd Street (Signal Hill/Caltrans)	AM	11.2	B	No	11.6	B	0.4	No	--	--	--
		PM	19.7	C	No	24.7	C	5.0	No	--	--	--
11	**Orange Avenue at I-405 Southbound Ramps (Long Beach/Caltrans)**	AM	**94.9**	**F**	**Yes**	**126.8**	**F**	**31.9**	No [a]	--	--	--
		PM	**188.0**	**F**	**Yes**	**321.5**	**F**	**133.5**	No [a]	--	--	--
18	I-405 Southbound Off-Ramp at Spring Street (Signal Hill/Long Beach/Caltrans)	AM	34.3	C	No	48.4	D	14.1	No	--	--	--
		PM	24.9	C	No	23.9	C	-1.0	No	--	--	--
20	Temple Avenue at I-405 Northbound Off-Ramp (Long Beach/Caltrans)	AM	13.4	B	No	12.8	B	-0.6	No	--	--	--
		PM	15.9	B	No	15.1	B	-0.8	No	--	--	--

Notes:
LOS= Level of Service, please refer to *Tables 2* and *9* for the LOS definitions
ICU= Intersection Capacity Utilization
s/v= seconds per vehicle (delay)
= Deficient LOS based on City's LOS standards.
= Deficient LOS and Significant Impact based on Caltrans LOS standards.
[a] An unsignalized intersection impact is considered to be significant if the project causes an intersection at LOS D or better to degrade to LOS E or F.

Table 3.11-11
Year 2040 Plus Project Intersection Peak Hour Levels of Service - Caltrans

#	Key Intersection	Time Period	(1) Existing (Year 2018)			(2) Year 2040 Baseline			(3) Year 2040 plus Project				(4) Year 2040 Baseline plus Project With Potential Improvement Measures		
			Delay (s/v)	*LOS*	*Deficient?*	*Delay (s/v)*	*LOS*	*Deficient?*	*Delay (s/v)*	*LOS*	*ICU or Delay Change (3) - (2)*	*Significant Impact?*	*Delay (s/v)*	*LOS*	*ICU or Delay Change (4) - (3)*
10	I-405 Northbound Ramps at 32nd Street (Signal Hill/Caltrans)	AM	11.2	B	No	11.5	B	No	11.9	B	0.4	No	--	--	--
		PM	19.7	C	No	22.6	C	No	29.9	D	7.3	No	--	--	--
11	**Orange Avenue at I-405 Southbound Ramps (Long Beach/Caltrans) [a]**	AM	**94.9**	**F**	**Yes**	18.9	B	No	19.7	B	0.8	No	--	--	--
		PM	**188.0**	**F**	**Yes**	13.3	B	No	14.6	B	1.3	No	--	--	--
18	**I-405 Southbound Off-Ramp at Spring Street (Signal Hill/Long Beach/Caltrans)**	AM	34.3	C	No	46.1	D	No	**61.0**	**E**	**14.9**	**Yes**	25.4	C	-35.6
		PM	24.9	C	No	24.4	C	No	23.9	C	-0.5	No	22.8	C	-1.1
20	Temple Avenue at I-405 Northbound Off-Ramp (Long Beach/Caltrans)	AM	13.4	B	No	13.5	B	No	12.9	B	-0.6	No	--	--	--
		PM	15.9	B	No	16.0	B	No	15.3	B	-0.7	No	--	--	--

Notes:
LOS= Level of Service, please refer to *Tables 2* and *9* for the LOS definitions
ICU= Intersection Capacity Utilization
s/v= seconds per vehicle (delay)
= Deficient LOS based on City's LOS standards.
= Deficient LOS and Significant Impact based on Caltrans LOS standards.
[a] Based on direction from City staff, the City of Long Beach has planned improvements which include a signalized intersection at Orange Avenue/I-405 Southbound Ramps. These planned improvements have been assumed under Year 2040 Baseline and Year 2040 Plus Project traffic conditions.

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Congestion Management Plan (CMP) Analysis

CMP Intersections

Review of the CMP highway and roadway system indicates that none of the key study intersections are CMP arterial monitoring intersections. The nearest CMP arterial monitoring intersections near the Proposed Project area are:

CMP ID	Intersection (Jurisdiction)
34	Lakewood Boulevard/Carson Street (Long Beach)
35	Lakewood Boulevard/Willow Street (Long Beach)

CEQA Impact Determination

Proposed Project impacts to CMP arterial monitoring intersections would be **less than significant** under CEQA.

NEPA Impact Determination

Proposed Project impacts to CMP arterial monitoring intersections would have **no adverse effect** under NEPA.

The following four (4) key study intersections are freeway on/off-ramp intersections where the project will add 50 or more trips during either the AM or PM weekday peak hours:

10. I-405 Northbound Ramps at 32nd Street (Signal Hill/Caltrans)
11. Orange Avenue at I-405 Southbound Ramps (Long Beach/Caltrans)
18. I-405 Southbound Off-Ramp at Spring Street (Signal Hill/Long Beach/Caltrans)
20. Temple Avenue at I-405 Northbound Off-Ramp (Long Beach/Caltrans)

Based on results of the detailed impact analysis summarized in Tables 3.11-10 and 3.11-11, the Proposed Project will not significantly impact the intersections of the Orange Avenue at I-405 northbound ramps and the I-405 freeway southbound off-ramp at Spring Street.

CEQA Impact Determination

With the implementation of potential mitigation measures at these locations, the impact of the Proposed Project would be **less than significant** under CEQA.

NEPA Impact Determination

With the implementation of potential mitigation measures at these locations, the Proposed Project would have **no adverse effect** under NEPA.

CMP Freeway Mainline Segments

The Proposed Project will add 150 or more trips, in either direction, during the AM or PM weekday peak hours to the following five (5) CMP freeway monitoring locations in the Proposed Project vicinity:

CMP Station	Intersection/Jurisdiction
No. 1033	SR-91, east of Alameda Street/Santa Fe Avenue
No. 1034	SR-91, east of Cherry Avenue
No. 1035	SR-91, between Norwalk Boulevard and Pioneer Boulevard
No. 1066	I-405, at Santa Fe Avenue
No. 1067	I-405, south of I-110 Freeway at Carson Scales

Table 3.11-12 (CMP Freeway Mainline Segment Peak Hour Levels of Service Existing (2018)+Project Conditions) and Table 3.11-13 (CMP Freeway Mainline Segment Peak Hour Levels of Service Year 2040+ Project Conditions) present the results of the CMP freeway mainline analysis under Existing (2018) Plus Project and Year 2040 Plus Project conditions, respectively.

Based upon the application of the significance criteria, the Proposed Project is not expected to cause significant traffic impacts any of the CMP freeway mainline segments under Existing (2018) Plus Project or Year 2040 Plus Project conditions.

Table 3.11-12
CMP Freeway Mainline Segment Peak Hour Levels of Service Existing (2018)+Project Conditions

CMP Station #	Location	Peak Hour	Freeway Capacity (vph) [a]		Existing (Year 2018) [b]						Freeway Capacity (vph) [a]		Existing (Year 2018) Plus Project								
					NB/EB			SB/WB					NB/EB					SB/WB				
			NB/EB	SB/WB	Existing Demand	Demand / Cap	LOS [c]	Existing Demand	Demand / Cap	LOS [c]	NB/EB	SB/WB	Future Demand	Demand / Cap	LOS [c]	D/C Change	Significant Impact?	Future Demand	Demand / Cap	LOS [c]	D/C Change	Significant Impact?
1033	SR-91, east of	AM	12,000	12,000	6,019	0.502	A	9,646	0.804	D	12,000	12,000	6,194	0.516	A	0.014	No	9,706	0.809	D	0.005	No
	Alameda St/Santa Fe Ave	PM	12,000	12,000	8,714	0.726	C	7,177	0.598	A	12,000	12,000	8,798	0.733	C	0.007	No	7,372	0.614	B	0.016	No
1034	**SR-91, east of**	AM	10,000	12,000	**10,292**	**1.029**	**F0**	7,604	0.634	B	10,000	12,000	**10,344**	**1.034**	**F0**	**0.005**	**No**	7,760	0.647	B	0.013	No
	Cherry Avenue	PM	10,000	12,000	**10,230**	**1.023**	**F0**	6,068	0.506	A	10,000	12,000	**10,409**	**1.041**	**F0**	**0.018**	**No**	6,147	0.512	A	0.006	No
1035	**SR-91, between**	AM	10,000	10,000	6,817	0.682	B	**13,766**	**1.377**	**F2**	10,000	10,000	6,869	0.687	B	0.005	No	**13,922**	**1.392**	**F2**	**0.015**	**No**
	Norwalk Blvd and Pioneer Blvd	PM	10,000	10,000	7,160	0.716	C	**13,481**	**1.348**	**F1**	10,000	10,000	7,339	0.734	C	0.018	No	**13,560**	**1.356**	**F2**	**0.008**	**No**
1066	**I-405, at**	AM	10,000	10,000	**10,719**	**1.072**	**F0**	**12,502**	**1.250**	**F1**	10,000	10,000	**10,780**	**1.078**	**F0**	**0.006**	**No**	**12,655**	**1.266**	**F1**	**0.016**	**No**
	Santa Fe Avenue	PM	10,000	10,000	9,631	0.963	E	**15,588**	**1.559**	**F3**	10,000	10,000	9,817	0.982	E	0.019	No	**15,686**	**1.569**	**F3**	**0.010**	**No**
1067	I-405, south of	AM	12,000	12,000	9,668	0.806	D	7,933	0.661	B	12,000	12,000	9,722	0.810	D	0.004	No	8,067	0.672	B	0.011	No
	I-110 Fwy at Carson Scales	PM	12,000	12,000	8,799	0.733	C	10,035	0.836	D	12,000	12,000	8,963	0.747	C	0.014	No	10,121	0.843	D	0.007	No

Notes:

[a] The capacities and LOS criteria are based upon the 2010 Los Angeles County CMP Traffic Impact Study Guidelines. Freeway capacity is 2,000 vehicles per hour (vph) per lane.

[b] The Year 2016 traffic volumes were adjusted by 3.04% to reflect Year 2018 conditions (assumes 1.52% annual growth rate, consistent with 2010 LA CMP).

[c] The LOS is based on the following D/C ratios:

LOS	D/C Ratio	LOS	D/C Ratio	LOS	D/C Ratio
A	0-0.60	D	>0.80-0.90	F1	>1.25-1.35
B	>0.60-0.70	E	>0.90-1.00	F2	>1.35-1.45
C	>0.70-0.80	F0	>1.00-1.25	F3	>1.45

Deficient LOS under Existing (2018).

Deficient LOS under Existing Plus Project.

Deficient LOS under Existing Plus Project.

Table 3.11-13
CMP Freeway Mainline Segment Peak Hour Levels of Service Year 2040+Project Conditions

CMP Station #	Location	Peak Hour	Freeway Capacity (vph) [a]		Year 2040 Baseline [b]						Year 2040 Plus Project									
					NB/EB			SB/WB			NB/EB					SB/WB				
			NB/EB	SB/WB	Future Demand	Demand / Cap	LOS [c]	Future Demand	Demand / Cap	LOS [c]	NB/EB	SB/WB	Future Demand	Demand / Cap	LOS [c]	D/C Change	Significant Impact?	Future Demand	Demand / Cap	LOS [c]	D/C Change	Significant Impact?
1033	SR-91, east of	AM	12,000	12,000	6,413	0.534	A	10,277	0.856	D	12,000	12,000	6,588	0.549	A	0.015	No	10,337	0.861	D	0.005	No
	Alameda St/Santa Fe Ave	PM	12,000	12,000	9,284	0.774	C	7,646	0.637	B	12,000	12,000	9,368	0.781	C	0.007	No	7,841	0.653	B	0.016	No
1034	**SR-91, east of**	AM	10,000	12,000	**10,966**	**1.097**	**F0**	8,101	0.675	B	10,000	12,000	**11,018**	**1.102**	**F0**	**0.005**	**No**	8,257	0.688	B	0.013	No
	Cherry Avenue	PM	10,000	12,000	**10,899**	**1.090**	**F0**	6,465	0.539	A	10,000	12,000	**11,078**	**1.108**	**F0**	**0.018**	**No**	6,544	0.545	A	0.006	No
1035	**SR-91, between**	AM	10,000	10,000	7,263	0.726	C	**14,666**	**1.467**	**F3**	10,000	10,000	7,315	0.732	C	0.006	No	**14,822**	**1.482**	**F3**	**0.015**	**No**
	Norwalk Blvd and Pioneer Blvd	PM	10,000	10,000	7,629	0.763	C	**14,363**	**1.436**	**F2**	10,000	10,000	7,808	0.781	C	0.018	No	**14,442**	**1.444**	**F2**	**0.008**	**No**
1066	**I-405, at**	AM	10,000	10,000	**11,421**	**1.142**	**F0**	**13,320**	**1.332**	**F1**	10,000	10,000	**11,482**	**1.148**	**F0**	**0.006**	**No**	**13,473**	**1.347**	**F1**	**0.015**	**No**
	Santa Fe Avenue	PM	10,000	10,000	**10,261**	**1.026**	**F0**	**16,608**	**1.661**	**F3**	10,000	10,000	**10,447**	**1.045**	**F0**	**0.019**	**No**	**16,706**	**1.671**	**F3**	**0.010**	**No**
1067	I-405, south of	AM	12,000	12,000	10,301	0.858	D	8,452	0.704	C	12,000	12,000	10,355	0.863	D	0.005	No	8,586	0.716	C	0.012	No
	I-110 Fwy at Carson Scales	PM	12,000	12,000	9,374	0.781	C	10,692	0.891	D	12,000	12,000	9,538	0.795	C	0.014	No	10,778	0.898	D	0.007	No

Notes:

[a] The capacities and LOS criteria are based upon the 2010 Los Angeles County CMP Traffic Impact Study Guidelines. Freeway capacity is 2,000 vehicles per hour (vph) per lane.

[b] The Year 2016 traffic volumes were adjusted by 1.52% per year to Year 2020 future conditions, then adjusted by 0.17% per year to reflect Year 2040 Baseline future conditions (consistent with 2010 LA CMP).

[c] The LOS is based on the following D/C ratios:

LOS	D/C Ratio	LOS	D/C Ratio	LOS	D/C Ratio
A	0-0.60	D	>0.80-0.90	F1	>1.25-1.35
B	>0.60-0.70	E	>0.90-1.00	F2	>1.35-1.45
C	>0.70-0.80	F0	>1.00-1.25	F3	>1.45

Deficient LOS under Year 2040 Baseline.

Deficient LOS under Year 2040 Plus Project.

Deficient LOS under Year 2040 Plus Project.

CMP Station #	Location	Peak Hour	Freeway Capacity (vph) [a]		Year 2040 Baseline [b]						Freeway Capacity (vph) [a]		Year 2040 Plus Project								
					NB/EB			SB/WB					NB/EB					SB/WB				
			NB/EB	SB/WB	Future Demand	Demand / Cap	LOS [c]	Future Demand	Demand / Cap	LOS [c]	NB/EB	SB/WB	Future Demand	Demand / Cap	LOS [c]	D/C Change	Significant Impact?	Future Demand	Demand / Cap	LOS [c]	D/C Change	Significant Impact?
1033	SR-91, east of	AM	12,000	12,000	6,413	0.534	A	10,277	0.856	D	12,000	12,000	6,711	0.559	A	0.025	No	10,347	0.862	D	0.006	No
	Alameda St/Santa Fe Ave	PM	12,000	12,000	9,284	0.774	C	7,646	0.637	B	12,000	12,000	9,386	0.782	C	0.008	No	7,960	0.663	B	0.026	No
1034	**SR-91, east of**	AM	10,000	12,000	**10,966**	**1.097**	**F0**	8,101	0.675	B	10,000	12,000	**11,046**	**1.105**	**F0**	**0.008**	**No**	8,441	0.703	C	0.028	No
	Cherry Avenue	PM	10,000	12,000	**10,899**	**1.090**	**F0**	6,465	0.539	A	10,000	12,000	**11,258**	**1.126**	**F0**	**0.036**	**Yes**	6,581	0.548	A	0.009	No
1035	**SR-91, between**	AM	10,000	10,000	7,263	0.726	C	**14,666**	**1.467**	**F3**	10,000	10,000	7,343	0.734	C	0.008	No	**15,006**	**1.501**	**F3**	**0.034**	**Yes**
	Norwalk Blvd and Pioneer Blvd	PM	10,000	10,000	7,629	0.763	C	**14,363**	**1.436**	**F2**	10,000	10,000	7,988	0.799	C	0.036	No	**14,479**	**1.448**	**F2**	**0.012**	**No**
1065	**I-405, north of**	AM	10,000	10,000	**10,024**	**1.002**	**F0**	9,019	0.902	E	10,000	10,000	**10,237**	**1.024**	**F0**	**0.022**	**Yes**	9,069	0.907	E	0.005	No
	SR-22 Freeway	PM	10,000	10,000	8,823	0.882	D	**11,030**	**1.103**	**F0**	10,000	10,000	8,896	0.890	D	0.008	No	**11,255**	**1.126**	**F0**	**0.023**	**Yes**
1066	**I-405, at**	AM	10,000	10,000	**11,421**	**1.142**	**F0**	**13,320**	**1.332**	**F1**	10,000	10,000	**11,521**	**1.152**	**F0**	**0.010**	**No**	**13,745**	**1.375**	**F2**	**0.043**	**Yes**
	Santa Fe Avenue	PM	10,000	10,000	**10,261**	**1.026**	**F0**	**16,608**	**1.661**	**F3**	10,000	10,000	**10,710**	**1.071**	**F0**	**0.045**	**Yes**	**16,754**	**1.675**	**F3**	**0.014**	**No**
1067	I-405, south of	AM	12,000	12,000	10,301	0.858	D	8,452	0.704	C	12,000	12,000	10,391	0.866	D	0.008	No	8,835	0.736	C	0.032	No
	I-110 Fwy at Carson Scales	PM	12,000	12,000	9,374	0.781	C	10,692	0.891	D	12,000	12,000	9,778	0.815	D	0.034	No	10,823	0.902	E	0.011	No
1068	**I-405, north of**	AM	10,000	10,000	**10,336**	**1.034**	**F0**	8,951	0.895	D	10,000	10,000	**10,386**	**1.039**	**F0**	0.005	No	9,164	0.916	E	0.021	No
	Inglewood Ave at Compton Blvd	PM	10,000	10,000	**10,567**	**1.057**	**F0**	9,991	0.999	E	10,000	10,000	**10,792**	**1.079**	**F0**	**0.022**	**Yes**	**10,064**	**1.006**	**F0**	**0.007**	**No**
1069	**I-405, north of**	AM	10,000	10,000	**10,770**	**1.077**	**F0**	7,310	0.731	C	10,000	10,000	**10,810**	**1.081**	**F0**	**0.004**	**No**	7,480	0.748	C	0.017	No
	La Tijera Boulevard	PM	10,000	10,000	**10,479**	**1.048**	**F0**	9,366	0.937	E	10,000	10,000	**10,659**	**1.066**	**F0**	**0.018**	**No**	9,424	0.942	E	0.005	No
1070	I-405, north of	AM	12,000	12,000	11,536	0.961	E	7,830	0.653	B	12,000	12,000	11,576	0.965	E	0.004	No	8,000	0.667	B	0.014	No
	Venice Boulevard	PM	12,000	12,000	11,224	0.935	E	10,034	0.836	D	12,000	12,000	11,404	0.950	E	0.015	No	10,092	0.841	D	0.005	No
1073	**I-605, north of**	AM	10,000	10,000	8,381	0.838	D	8,237	0.824	D	10,000	10,000	8,461	0.846	D	0.008	No	8,577	0.858	D	0.034	No
	Carson Street	PM	10,000	10,000	9,711	0.971	E	7,129	0.713	C	10,000	10,000	**10,070**	**1.007**	**F0**	**0.036**	**Yes**	7,245	0.725	C	0.012	No
1074	**I-605, north of**	AM	12,000	12,000	10,029	0.836	D	11,681	0.973	E	12,000	12,000	10,089	0.841	D	0.005	No	11,936	0.995	E	0.022	No
	SR-91 Fwy & south of Alondra Blvd	PM	12,000	12,000	11,591	0.966	E	**12,102**	**1.009**	**F0**	12,000	12,000	11,861	0.988	E	0.022	No	**12,189**	**1.016**	**F0**	**0.007**	**No**
1078	**I-710, north of**	AM	6,000	6,000	4,908	0.818	D	**6,244**	**1.041**	**F0**	6,000	6,000	5,121	0.854	D	0.036	No	**6,294**	**1.049**	**F0**	**0.008**	**No**
	Pacific Coast Highway	PM	6,000	6,000	5,123	0.854	D	5,627	0.938	E	6,000	6,000	5,196	0.866	D	0.012	No	5,852	0.975	E	0.037	No
1079	**I-710, north of**	AM	8,000	8,000	7,204	0.901	E	**8,050**	**1.006**	**F0**	8,000	8,000	7,254	0.907	E	0.006	No	**8,263**	**1.033**	**F0**	**0.027**	**Yes**
	I-405 Freeway	PM	8,000	8,000	7,451	0.931	E	7,047	0.881	D	8,000	8,000	7,676	0.960	E	0.029	No	7,120	0.890	D	0.009	No

Notes:

[a] The capacities and LOS criteria are based upon the 2010 Los Angeles County CMP Traffic Impact Study Guidelines. Freeway capacity is 2,000 vehicles per hour (vph) per lane.

[b] The Year 2016 traffic volumes were adjusted by 1.52% per year to Year 2020 future conditions, then adjusted by 0.17% per year to reflect Year 2040 Baseline future conditions (consistent with 2010 LA CMP).

[c] The LOS is based on the following D/C ratios:

LOS	D/C Ratio	LOS	D/C Ratio	LOS	D/C Ratio
A	0-0.60	D	>0.80-0.90	F1	>1.25-1.35
B	>0.60-0.70	E	>0.90-1.00	F2	>1.35-1.45
C	>0.70-0.80	F0	>1.00-1.25	F3	>1.45

Deficient LOS under Year 2040 Baseline.

Deficient LOS under Year 2040 Plus Project.

Deficient LOS and Significant Impact under Year 2040 Plus Project.

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

State CEQA Guidelines Section 15064.3, subdivision (b), focuses on newly adopted criteria (vehicle miles traveled [VMT]) adopted pursuant to SB 743 for determining the significance of transportation impacts.

The first step in VMT analysis was to calculate the existing regional VMT that was compared with horizon year (2040) project VMT to determine project impact. The existing regional VMT per employee estimate was obtained from the draft guidelines of Long Beach. As shown in Table 3.11-14 (Existing Regional and Horizon Year (2040) Project VMT Comparison), the existing regional VMT per employee for LA County is 18.5. The Proposed Project's VMT was estimated using the SCAG RTP/SCS model.

Project Traffic Analysis Zone Update and Model Run for VMT Analysis

The SCAG RTP/SCS model uses a two tier TAZ system – Tier 1 zones and Tier 2 zones. Two or more Tier 2 zones make up a Tier 1 zone. The model utilizes Tier 2 zone system for modeling steps such as trip generation, trip distribution, and mode choice while it uses Tier 1 zone system for assignment purposes. The Plan Area is contained inside three Tier 1 zones and ten Tier 2 zones. Given the inability/complexity of performing zone splits in the SCAG RTP/SCS model, LSA used the existing zone system and modified the socioeconomic data of those Tier 1 and Tier 2 zones to isolate the Proposed Project from all other uses into both Tier 1 zones and their corresponding Tier 2 zones.

LSA converted the Proposed Project's land uses into the model's socioeconomic categories. The socioeconomic data for both Tier 1 and Tier 2 zones in the 2040 model scenario was updated with Proposed Project information. Upon completion of the socioeconomic data update, LSA conducted the model run for the 2040 scenario and estimated project VMT.

VMT Analysis

VMT is simply the product of trips and their trip lengths. This calculation can be conducted using output traffic volumes from the model and length of roadway links. However, based on OPR guidance VMT should be estimated based on trip purpose depending on the type of land use being evaluated. The travel model doesn't retain trip purposes after the final step (traffic assignment) of the model that produces traffic volumes. In order to estimate VMT by trip purpose, outputs from mode choice step were used as trips and the trip lengths were derived from the skimming step. Also as mentioned above, traffic assignment in the SCAG model is conducted at Tier1 zone system whereas mode choice outputs are available at a more disaggregate Tier2 zone system. Mode choice outputs include person trips by trip purpose and mode. Only auto modes were considered for VMT estimation purposes. The person trip tables were appropriately converted to vehicle trips by using

average auto occupancy factors from the model. The trip length or distance side of the equation was obtained using the model outputs from the "Skimming" step. The model skim outputs include peak and off peak skim matrices by mode, similar to trip outputs from the model. Different trips purposes in the model are used in the estimation of different VMT metrics. For example, VMT per capita estimates include all home based trip purposes, VMT per employee includes only home based work trips whereas for VMT per service population estimates include all trip purposes. The GCSP includes only non-residential land uses. Therefore, VMT per employee was used as the appropriate metric of comparison consistent with the City's draft VMT guidelines. VMT per employee for the Proposed Project was estimated using the Tier2 zone system. Homebased work VMT for all the Tier2 project zones was aggregated and was divided by total Proposed Project employment to derive the VMT per employee for the project. Horizon year (2040) VMT per employee for the Proposed Project was compared with the existing regional VMT per employee. Table 3.11-14 shows the project VMT per employee estimate under the horizon year (2040), and corresponding values for the region under existing conditions. As shown in Table 3.11-14, the Proposed Project's horizon year VMT per employee is 24.8% lower than existing regional average.

Table 3.11-14
Existing Regional and Horizon Year (2040) Project VMT Comparison

Metric	Existing Regional Average	Horizon Year (2040) Project Average	Percentage Difference
VMT per Employee	18.5	13.9	-24.8%

Source: Appendix D.

Therefore, based on the City's draft VMT guidelines and project VMT analysis, the Proposed Project would not exceed the existing regional average VMT. Therefore, the Proposed Project would not conflict with State CEQA Guidelines section 15064.3, subdivision (b) and impacts would be **less than significant**.

3.11.5 Cumulative Impacts

Because of the cumulative nature of transportation impacts, cumulative impacts to the study area's transportation network (study area intersections and freeway mainline segments) are addressed in Section 3.11.4, Impacts Analysis, under impact thresholds a) and b).

3.11.6 Mitigation Measures

For those intersections where projected traffic volumes are expected to result in deficient operating conditions, roadway improvements were identified that are expected to:

- Improve the effect of existing traffic, Proposed Project traffic, and future non-Proposed Project (ambient growth) traffic; and,

- Improve LOS to an acceptable range and/or to pre-Proposed Project conditions.

The following six (6) key study intersections were estimated to operate at deficient LOS under Existing (2018) plus Project conditions:

- Intersection 1 – Cherry Avenue/Carson Street
- Intersection 3 – Cherry Avenue/Cover Street
- Intersection 5 – Cherry Avenue/36th Street
- Intersection 7 – Cherry Avenue/Wardlow Road
- Intersection 9 – Orange Avenue/32nd Street
- Intersection 11 – Orange Avenue at I-405 SB Ramps

Although the intersection of Orange Avenue/I-405 SB Ramps (Intersection 11) is forecast to operate at unacceptable LOS F in the AM and PM peak hour, the intersection is not considered significantly impacted when compared to the LOS standards and significant impact criteria specified in the TIA. Therefore, 5 of the 6 key intersections above are significant impacts based on established criteria. The following ten (10) key intersections were estimated to operate at deficient LOS during Year 2040 plus Project conditions:

- Intersection 1 – Cherry Avenue/Carson Street:
- Intersection 3 – Cherry Avenue/Cover Street:
- Intersection 5 – Cherry Avenue/36th Street:
- Intersection 7 – Cherry Avenue/Wardlow Road:
- Intersection 9 – Orange Avenue/32nd Street
- Intersection 12 – Atlantic Avenue/Spring Street:
- Intersection 15 – Orange Avenue/Spring Street:
- Intersection 19 – Temple Avenue/Spring Street:
- Intersection 21 – Redondo Avenue at Spring Street:
- Intersection 26 – Orange Avenue/Willow Street

Implementation of mitigation measures that would alleviate significant traffic impacts attributable to the Proposed Project, address future deficiencies, and achieve satisfactory levels based on the thresholds of significance and performance standards per the City of Long Beach, City of Signal Hill, City of Lakewood, LA County PW, and Caltrans, will have to be identified by conducting focused traffic impact studies for specific development projects within the Plan Area as they

materialize in the future. As the GCSP is implemented, and new development occurs over time, the City will need to undertake targeted physical improvements to maintain desired levels of service. It will be necessary to develop a prioritization and phasing program for new and improved roadway facilities.

The timing of necessary improvements is difficult to predict for the buildout of GCSP that may take 21 years or more to fully materialize. Most cities with a formalized Trip Fee Program identify the timing for constructing programmed area-wide improvements based on the following:

1. **Looking to the Past:** A city implements an improvement based on "known" or past deficiencies, which may have been identified based on prior General Plan studies, accident history, and previously completed traffic studies.
2. **Looking to the Present:** A city requires the preparation of a traffic study for each development project that is inconsistent with its General Plan Land Use Element and/or add 50 peak hour trips to one intersection. The projects that are commonly subjected to the requirement includes proposed developments with 100 or more residential dwelling units, 25,000 SF or more of office, 1,000 SF or more of retail, or 100,000 SF or more of industrial. The traffic study would be the basis for identifying potential operational effects/ deficiencies that could then trigger the implementation of intersection or roadway improvements specified in the General Plan. Therefore, the mitigation measures are appropriately phased to respond to anticipated operational effects as they arise.
3. **Looking to the Future:** A city employs an incremental approach by conducting a phased analysis of traffic affects in the future. For example, detailed level of service and analyses could be conducted for a series of horizon years, such as in 5-year increments. The anticipated growth is distributed proportionately to each phase of the study. The mitigation measures are then targeted for implementation according to which future year the deficiencies are projected to occur in and warrant the improvement. In other words, mitigation measures are staged to reduce operational affects at the time they are anticipated to become unacceptable. Establishing a mitigation monitoring program that would be conducted in timely increments could supplement and validate the results of the phased analyses.
4. **Specific Development Project Triggers:** There are also cases wherein a specific development project would drive the construction of an improvement, whether it be a project-specific mitigation measure or a city's programmed/background improvement.
5. **Combination of the Above Triggers:** It may be that an improvement is put on the fast track for completion based on any combination of the above factors, and because of available funding, and/or it may be very desirable to the city based on social and economic factors that go beyond traffic operational benefits.

These intersection improvements are ultimately subject to the review, approval, rejection, modification, and implementation of the City of Long Beach and any other respective jurisdiction (if applicable, to maintain design consistency across jurisdictional boundaries). Due to differing right-of-way design standards between jurisdictions, the City of Long Beach will conduct ongoing coordination and consultation with the City of Lakewood and Signal Hill, as applicable, for projects that cross jurisdictional lines. As such, future street improvements may not exactly match what is described here due to future design constraints.

While the City has complete authority to determine the desirability and of its transportation system and road network, implementation of these potential mitigation measures may impact adjoining land use, require costly right-of-way acquisition, compromise accessibility to fronting land use, result in conflicts between different modes of travel, require the removal of on-street parking and bus stops, etc. The City may find the proposed improvements are infeasible or cause one or more significant effects in addition to those that would be caused by the Project as proposed, and choose not to implement them and/or implement alternate measures. It should be recognized that further environmental review may be required on a project-specific basis.

All future projects would be subject to a project-specific traffic impact analysis at the time of application. All viable mitigation measures will be reviewed and considered for implementation. If the project-specific traffic impact analysis results in an impact, the buildout of said project would be required to follow the identified mitigation, as determined feasible.

Furthermore, all future projects under the GCSP that are subject to Site Plan Review (SPR) entitlements are required to demonstrate consistency with Chapter 21.64 of the LBMC, which addresses transportation demand and trip reduction measures for large projects over 25,000 square feet in size. Therefore, the above-mentioned impacts would potentially be further reduced with the incorporation of referenced measures that include, but are not limited to, transportation information areas, preferential carpool/vanpool parking, bicycle parking and amenities, and bus stop improvements.

Intersections

Existing Plus Project Conditions

Figure 3.11-22A, Existing (2018) + Project Potential Mitigation Measures (Intersections 1-12), Figure 3.11-22B, Existing (2018) + Project Potential Mitigation Measures (Intersections 13-24), and Figure 3.11-22C, Existing (2018) + Project Potential Mitigation Measures (Intersections 25-28), illustrate the potential mitigation measures for Existing (Year 2018) Plus Project traffic conditions.

A Traffic Impact Analysis (TIA) shall be prepared during the entitlement process for future subsequent projects under the GCSP. The project-specific TIA shall identify potential operational impacts under

the methodology established by the Department of Public Works. If VMT or level of service inconsistencies are identified, the Project Applicant shall be responsible for implementing the following mitigation measures, as feasible. All applicable improvement measures shall have a nexus and proportionality to the operational impacts identified at the project-level.

Intersection 1 – Cherry Avenue/Carson Street (Long Beach):

MM-TRAF-1 Prior to receiving a Certificate of Occupancy, the Project Applicant shall be responsible for the construction of the following improvements at Cherry Avenue/Carson Street:

Widen and/or restripe the existing exclusive northbound right-turn lane to a shared through-right turn lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach.

Mitigation measure **MM-TRAF-1** would require additional right-of-way acquisition since the City of Long Beach identified that Cherry Avenue would implement planned improvements consisting of proposed bicycle facilities. Additional right-of-way acquisition or roadway widening would result in a loss of sidewalks and a loss of developable areas and related jobs. The objectives of the specific plan include the introduction of land uses to stimulate economic development and job growth and to increase mobility choices throughout the Plan Area. Therefore, the loss of developable areas and mobility connections to implement this mitigation to restore LOS would be in conflict with the intent of the specific plan. Therefore, this mitigation measure would potentially conflict with adopted mobility plans and require additional right-of-way that is not consistent with planning documents, including the GCSP. This identified improvement is considered infeasible. Without incorporation of feasible mitigation measures, the operation of this intersection would continue to be at an unacceptable level. This impact is considered significant and unavoidable.

Intersection 3 – Cherry Avenue/Cover Street (Long Beach/Lakewood):

MM-TRAF-2 Prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at Cherry Avenue/Cover Street**:**

Widen or restripe the existing exclusive northbound right-turn lane to a shared through-right turn lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach.

Mitigation measure **MM-TRAF-2** would require additional right-of-way acquisition since the City of Long Beach identified that Cherry Avenue would implement planned improvements consisting of proposed bicycle facilities. Due to the nature of these improvements, right-of-way acquisition from the City of Lakewood would not be required. Similar to mitigation measure **MM-TRAF-1**, additional right-of-way acquisition or roadway widening would result in a loss of sidewalks and a

loss of developable areas and related jobs, which would conflict with key GCSP objectives. This identified improvement is considered infeasible. Without incorporation of feasible mitigation measures, the operation of this intersection would continue to be at an unacceptable level. This impact is considered significant and unavoidable.

Intersection 5 – Cherry Avenue/36th Street (Long Beach/Lakewood):

MM-TRAF-3 Prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at Cherry Avenue/36th Street**:**

Restripe the eastbound approach to provide an exclusive left-turn lane. Construct an exclusive northbound right-turn lane. These improvements are subject to the approval of the City of Long Beach.

Mitigation measure **MM-TRAF-3** would require additional right-of-way acquisition from only the City of Lakewood (due to the nature of these improvements, right-of-way acquisition from the City of Long Beach would not be required). Additionally, the City of Long Beach has identified potential planned improvements consisting of proposed bicycle facilities, which would require additional right-of-way acquisition from both the City of Long Beach and City of Lakewood. Implementation of this mitigation measure would require acquisition of land in another jurisdiction (City of Lakewood). Similar to mitigation measure **MM-TRAF-1**, additional right-of-way acquisition is required and would result in a loss of sidewalks and a loss of developable areas and related jobs, which would conflict with key GCSP objectives. This identified improvement is considered infeasible. Without incorporation of feasible mitigation measures, the operation of this intersection would continue to be at an unacceptable level. This impact is considered significant and unavoidable.

Intersection 7 – Cherry Avenue/Wardlow Road (Long Beach):

MM-TRAF-4 Prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at Cherry Avenue/ Wardlow Road**:**

Construct two additional northbound through lanes and an exclusive northbound right-turn lane. Construct two additional southbound through lanes. Restripe the existing eastbound shared through-left turn lane to an exclusive left-turn lane and construct an additional eastbound through lane. Restripe the existing westbound shared through-left turn lane to an exclusive left-turn lane. Construct two westbound through lanes. Restripe the westbound shared through-right turn lane to an exclusive westbound right-turn lane. These improvements are subject to the approval of the City of Long Beach

Mitigation measure **MM-TRAF-4** would require additional right-of-way acquisition inclusive of proposed bicycle facilities identified by City of Long Beach. Similar to mitigation measure **MM-TRAF-1**, additional right-of-way acquisition is required and would result in a loss of sidewalks and a loss of developable areas and related jobs, which would conflict with key GCSP objectives. This identified improvement is considered infeasible. Without incorporation of feasible mitigation measures, the operation of this intersection would continue to be at an unacceptable level. This impact is considered significant and unavoidable.

Intersection 9 – Orange Avenue/32nd Street (Signal Hill):

MM-TRAF-5 Prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at Orange Avenue/ 32nd Street**:**

Restripe the northbound approach to provide an exclusive right-turn lane. These improvements are subject to the approval of the City of Signal Hill.

Since the improvements under mitigation measure **MM-TRAF-5** fall under the jurisdiction of another public agency (City of Signal Hill) and not the lead agency (City of Long Beach), the improvements cannot be guaranteed. Therefore, without incorporation of feasible mitigation measures, the operation of this intersection would continue to be at an unacceptable level. This impact is considered significant and unavoidable.

Year 2040 Plus Project Conditions

Figure 3.11-23A, Year 2040 +Project Potential Mitigation Measures (Intersections 1-12), Figure 3.11-23B, Year 2040 +Project Potential Mitigation Measures (Intersections 13-24), and Figure 3.11-23C, Year 2040 +Project Potential Mitigation Measures (Intersections 25-28), illustrate the potential mitigation measures for Year 2040 Plus Project traffic conditions. Despite implementing mitigation measures **MM-TRAF-1** through **MM-TRAF-5**, the following intersections would operate under unacceptable LOS and would require additional mitigation measures.

Intersection 1 – Cherry Avenue/Carson Street (Long Beach):

MM-TRAF-6 In addition to mitigation measure **MM-TRAF-1**, prior to receiving a Certificate of Occupancy, the Project Applicant shall be responsible for the construction of the following improvements at Cherry Avenue/Carson Street:

Widen the eastbound approach to construct a 4th through lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach.

Mitigation measure **MM-TRAF-6** would require additional right-of-way acquisition since the City of Long Beach identified that Cherry Avenue would implement planned improvements consisting of proposed bicycle facilities. Similar to mitigation measure **MM-TRAF-1**, additional right-of-way acquisition is required and would result in a loss of sidewalks and a loss of developable areas and related jobs, which would conflict with key GCSP objectives. This identified improvement is considered infeasible. Without incorporation of feasible mitigation measures, the operation of this intersection would continue to be at an unacceptable level. This impact is considered significant and unavoidable.

Intersection 3 – Cherry Avenue/Cover Street (Long Beach/Lakewood):

MM-TRAF-7 In addition to mitigation measure **MM-TRAF-2**, prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at Cherry Avenue/Cover Street**:**

Widen the northbound approach to provide an exclusive right-turn lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach.

Mitigation measure **MM-TRAF-7** would require additional right-of-way acquisition since the City of Long Beach identified that Cherry Avenue would implement planned improvements consisting of proposed bicycle facilities. These improvements would require right-of-way acquisition from both the City of Long Beach and City of Lakewood. Implementation of this mitigation measure would require acquisition of land in another jurisdiction (City of Lakewood). Similar to mitigation measure **MM-TRAF-1**, additional right-of-way acquisition is required and would result in a loss of sidewalks and a loss of developable areas and related jobs, which would conflict with key GCSP objectives. This identified improvement is considered infeasible. Without incorporation of feasible mitigation measures, the operation of this intersection would continue to be at an unacceptable level. This impact is considered significant and unavoidable.

Intersection 5 – Cherry Avenue/36th Street (Long Beach/Lakewood):

MM-TRAF-8 In addition to mitigation measure **MM-TRAF-3**, prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at Cherry Avenue/36th Street**:**

Modify the traffic signal to provide for an 8-phase traffic signal. These improvements are subject to the approval of the City of Long Beach.

Mitigation measure **MM-TRAF-8** would require additional right-of-way acquisition since the City of Long Beach identified that Cherry Avenue would implement planned improvements consisting

of proposed bicycle facilities. Similar to mitigation measure **MM-TRAF-1**, additional right-of-way acquisition is required and would result in a loss of sidewalks and a loss of developable areas and related jobs, which would conflict with key GCSP objectives. This identified improvement is considered infeasible. Without incorporation of feasible mitigation measures, the operation of this intersection would continue to be at an unacceptable level. This impact is considered significant and unavoidable.

Intersection 12 – Atlantic Avenue/Spring Street (Signal Hill/Long Beach):

MM-TRAF-9 Prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at Atlantic Avenue/ Spring Street**:**

Construct an additional eastbound through lane and an additional westbound through lane. Restripe the existing exclusive westbound right-turn lane to a shared through-right turn lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach.

Mitigation measure **MM-TRAF-9** would require additional right-of-way acquisition from both the City of Long Beach and City of Signal Hill. Additionally, the City of Long Beach has identified proposed bicycle facilities, which would require additional right-of-way acquisition from both the City of Long Beach and City of Signal Hill. Implementation of this mitigation measure would require acquisition of land in another jurisdiction (City of Signal Hill). Similar to mitigation measure **MM-TRAF-1**, additional right-of-way acquisition is required and would result in a loss of sidewalks and a loss of developable areas and related jobs, which would conflict with key GCSP objectives. This identified improvement is considered infeasible. Without incorporation of feasible mitigation measures, the operation of this intersection would continue to be at an unacceptable level. This impact is considered significant and unavoidable.

Intersection 15 – Orange Avenue/Spring Street (Signal Hill/Long Beach):

MM-TRAF-10 Prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at Orange Avenue/ Spring Street**:**

Widen and/or restripe the northbound approach to provide a shared through/right-turn lane. Convert the southbound right-turn lane into a shared through/right-turn lane. Widen along the Proposed Project frontage to accommodate two south bound through lanes. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach.

Mitigation measure **MM-TRAF-10** would require additional right-of-way acquisition from the City of Long Beach and City of Signal Hill. Additionally, the City of Long Beach has identified

potential planned improvements consisting of proposed bicycle facilities, which would require additional right-of-way acquisition from both the City of Long Beach and City of Signal Hill. Implementation of this mitigation measure would require acquisition of land in another jurisdiction (City of Signal Hill). Similar to mitigation measure **MM-TRAF-1**, additional right-of-way acquisition is required and would result in a loss of sidewalks and a loss of developable areas and related jobs, which would conflict with key GCSP objectives. This identified improvement is considered infeasible. Without incorporation of feasible mitigation measures, the operation of this intersection would continue to be at an unacceptable level. This impact is considered significant and unavoidable.

Intersection 19 – Temple Avenue/Spring Street (Long Beach):

MM-TRAF-11 Prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at Temple Avenue/ Spring Street**:**

Widen the eastbound approach to provide an exclusive right-turn lane. Widen the westbound approach to provide an additional through lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach.

Mitigation measure **MM-TRAF-11** would also require additional right-of-way acquisition inclusive of proposed bicycle facilities identified by the City of Long Beach. Similar to mitigation measure **MM-TRAF-1**, additional right-of-way acquisition is required and would result in a loss of sidewalks and a loss of developable areas and related jobs, which would conflict with key GCSP objectives. This identified improvement is considered infeasible. Without incorporation of feasible mitigation measures, the operation of this intersection would continue to be at an unacceptable level. This impact is considered significant and unavoidable.

Intersection 21 – Redondo Avenue/Spring Street (Long Beach):

MM-TRAF-12 Prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at Redondo Avenue/ Spring Street**:**

Widen the eastbound approach to provide an additional through lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach.

Mitigation measure **MM-TRAF-12** would require additional right-of-way acquisition inclusive of proposed bicycle facilities identified by the City of Long Beach. Similar to mitigation measure **MM-TRAF-1**, additional right-of-way acquisition is required and would result in a loss of sidewalks and a loss of developable areas and related jobs, which would conflict with key GCSP objectives. This identified improvement is considered infeasible. Without incorporation of feasible

mitigation measures, the operation of this intersection would continue to be at an unacceptable level. This impact is considered significant and unavoidable.

Intersection 26 – Orange Avenue/Willow Street (Signal Hill/Long Beach):

MM-TRAF-13 Prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at Cherry Avenue at Willow Street**:**

Construct an additional northbound through lane. Construct an additional southbound through lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Signal Hill.

Mitigation measure **MM-TRAF-13** would fall under the jurisdiction of another public agency (City of Signal Hill) and are not guaranteed. These improvements would require right-of-way acquisition from both the City of Long Beach and City of Signal Hill. Implementation of this mitigation measure would require acquisition of land in another jurisdiction (City of Signal Hill). Similar to mitigation measure **MM-TRAF-1**, additional right-of-way acquisition is required and would result in a loss of sidewalks and a loss of developable areas and related jobs, which would conflict with key GCSP objectives. This identified improvement is considered infeasible. Without incorporation of feasible mitigation measures, the operation of this intersection would continue to be at an unacceptable level. This impact is considered significant and unavoidable.

Project-Related Fair Share Contribution

Table 3.11-15 (Year 2040 Project Fair Share Contribution) provides the Proposed Project's fair share contribution based on the AM and/or PM peak hour percentage of net operational affect at the study intersections by the Proposed Project for Year 2040 traffic conditions, as well as the intersection of Orange Avenue/I-405 southbound ramps. Although this intersection is not considered affected, it does operate adversely under existing traffic conditions. Also, preliminary review of the existing volumes indicate that the intersection satisfies the criteria for the installation of a traffic signal. Should Caltrans or the City of Long Beach desire to install a traffic signal at this location, the Proposed Project may be expected to pay a fair-share of the total cost.

Table 3.11-15
Year 2040 Project Fair Share Contribution

#	Key Intersection	Impacted Time Period	(1) Existing Traffic	(2) Project Only Traffic	(3) Year 2040 Plus Project Traffic	(4) Net Project Percent Increast
1	Cherry Avenue at	AM	--	--	--	--
	Carson Street (Long Beach)	PM	5,245	1,040	6,519	**81.63%**
3	Cherry Avenue at	AM	--	--	--	--
	Cover Street (Long Beach/Lakewood)	PM	3,815	1,074	5,064	**85.99%**
5	Cherry Avenue at	AM	--	--	--	--
	36th Street (Long Beach/Lakewood)	PM	4,249	1,289	5,762	**85.19%**
7	Cherry Avenue at	AM	4,080	1,670	5,951	89.26%
	Wardlow Road (Long Beach)	PM	4,518	1,943	6,672	**90.20%**
9	Orange Avenue at	AM	--	--	--	--
	32nd Street (Signal Hill)	PM	2,013	157	2,244	**67.97%**
11	Orange Avenue at	AM	1,897	119	2,139	49.17%
	I-405 Southbound Ramps (Long Beach/Caltrans)	PM	2,001	200	2,331	**60.61%**
12	Atlantic Avenue at	AM	--	--	--	--
	Spring Street (Signal Hill/Long Beach)	PM	4,015	407	4,619	**67.38%**
15	Orange Avenue at	AM	3,151	120	3,432	42.70%
	Spring Street (Signal Hill/Long Beach)	PM	3,613	181	3,976	**49.86%**
18	I-405 Southbound Off-Ramp at	AM	3,040	290	3,525	**59.79%**
	Spring Street (Signal Hill/Long Beach/Caltrans)	PM	--	--	--	--
19	Temple Avenue at	AM	3,754	282	4,223	60.13%
	Spring Street (Long Beach)	PM	3,810	386	4,383	**67.36%**
21	Redondo Avenue at	AM	--	--	--	--
	Spring Street (Long Beach)	PM	3,721	244	4,101	**64.21%**
26	Orange Avenue at	AM	--	--	--	--
	Willow Street (Signal Hill/Long Beach)	PM	4,214	192	4,637	**45.39%**

Notes:

Net Project Percent Increase (4) = [Column (2)] / [Column (3) – Column (1)]

Caltrans Facilities

Intersections

The Proposed Project will cause an operational deficiency at the I-405 Southbound Off-Ramp/Spring Street intersection under the Buildout Year 2040 Plus Project conditions. Mitigation measure **MM-TRAF-14**, discussed below, provides the recommended improvements for this intersection.

Intersection 18 – I-405 Southbound Off-Ramp/Spring Street:

MM-TRAF-14 Prior to receiving a Certificate of Occupancy, the Proposed Project shall construct the following improvements at I-405 Southbound Off-Ramp/Spring Street**:**

Restripe the westbound approach to provide an additional through lane. These improvements are subject to the approval of the City of Long Beach and/or Caltrans.

Since the improvements under mitigation measure **MM-TRAF-14** fall under the jurisdiction of another public agency (Caltrans) and not the lead agency (City), the improvements cannot be guaranteed at this time. Without feasible mitigation, the impact is considered significant and unavoidable.

Freeway Segments

The Proposed Project would not impact any freeway segments, as such no improvements would be required.

3.11.7 Significance After Mitigation Measures

The following section discuss the levels of significance of Proposed Project impacts after the prescribed mitigation measures have been implemented. Section 15126.4 of the State CEQA Guidelines address the consideration and discussion of mitigation measures. Under CEQA, an EIR shall describe feasible measures which could minimize significant adverse effects.

As shown in the analysis, the Proposed Project would require mitigation measures. Mitigation measures described under Section 3.11.6, Mitigation Measures, identify when the proposed improvements would fall under the authority of another jurisdiction or require additional right-of-way acquisition causing operational deficiencies or conflicts with the intent of the specific plan. All identified mitigation measures were determined to be infeasible, therefore, all impacts related to consistency with established LOS metrics are considered significant and unavoidable.

3.12.8 References

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ITE (Institute of Transportation Engineers). 2017. *Trip Generation Manual*. 10th ed. Washington, DC: Institute of Transportation Engineers.

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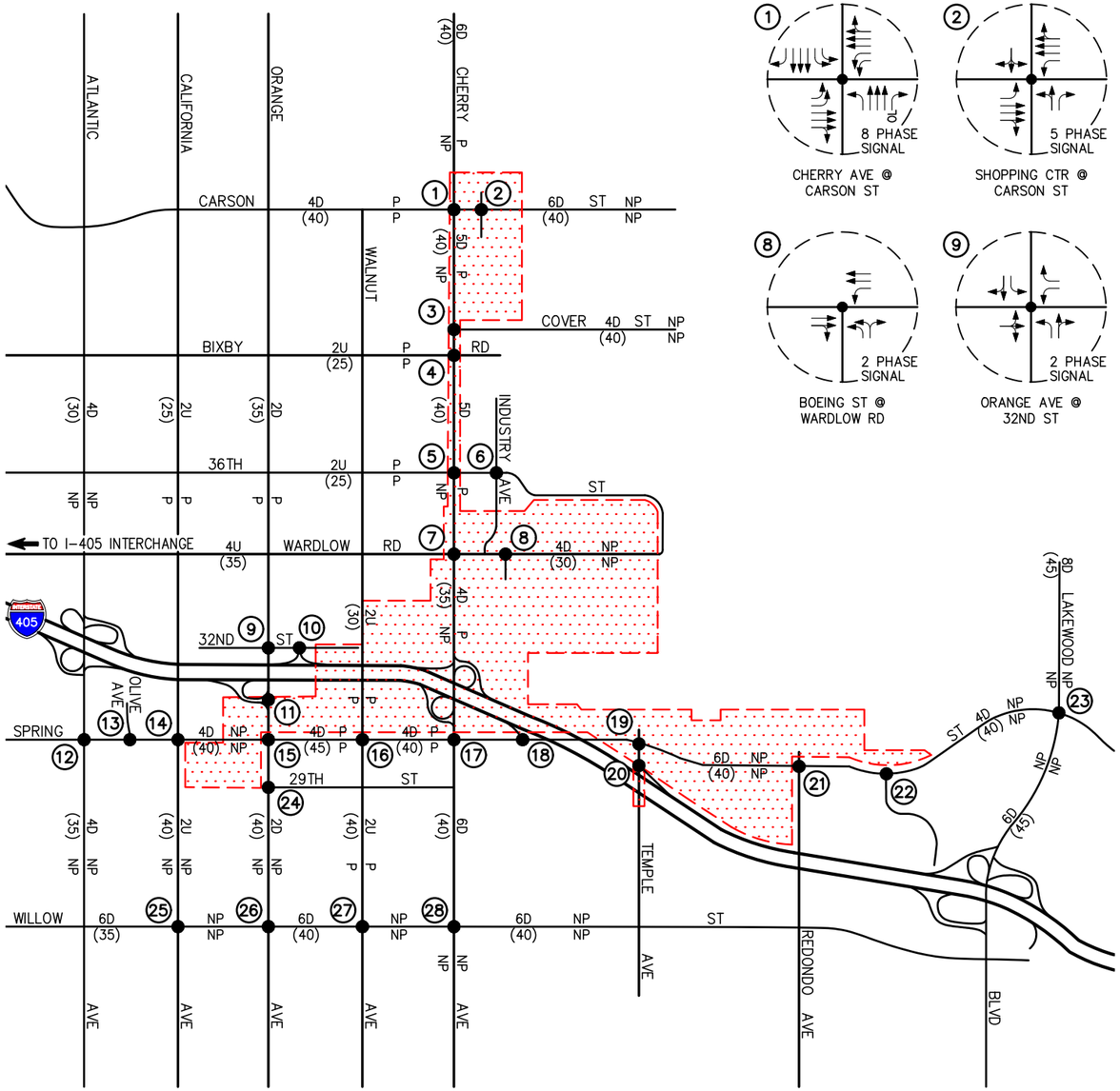
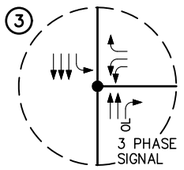


CHERRY AVE @ CARSON ST

SHOPPING CTR @ CARSON ST



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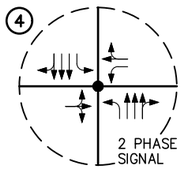

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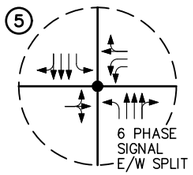

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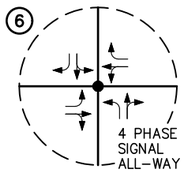
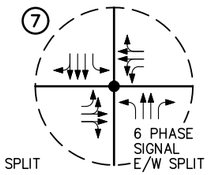


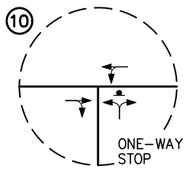
INDUSTRY AVE @ 36TH ST



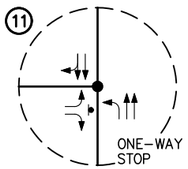
CHERRY AVE @ WARDLOW RD

BOEING ST @ WARDLOW RD

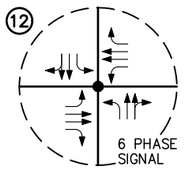
ORANGE AVE @ 32ND ST



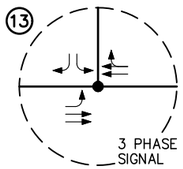
I-405 NB RAMPS @ 32ND ST



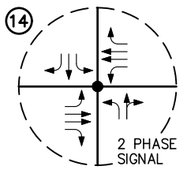
ORANGE AE @ I-405 SB RAMPS



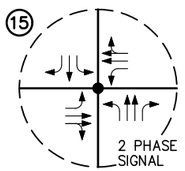
ATLANTIC AVE @ SPRING ST



OLIVE AVE @ SPRING ST



CALIFORNIA AVE @ SPRING ST



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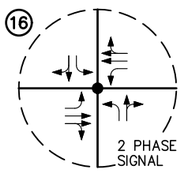
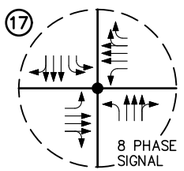


WALNUT AVE @ SPRING ST



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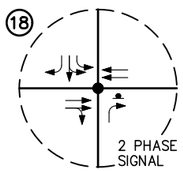
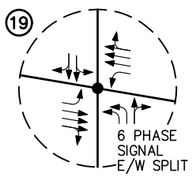
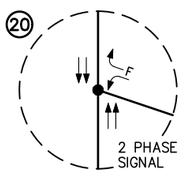


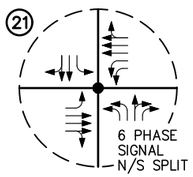
I-405 SB OFF-RAMPS @ SPRING ST



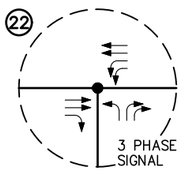
TEMPLE AVE @ SPRING ST



TEMPLE AVE @ I-405 NB OFF-RAMPS



REDONDO AVE @ SPRING ST



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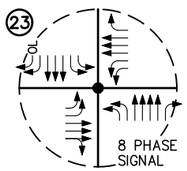

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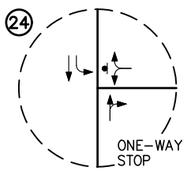

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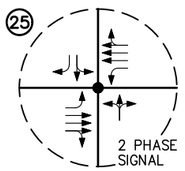
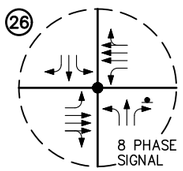


CALIFORNIA AVE @ WILLOW ST



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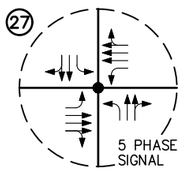
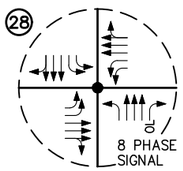


WALNUT AVE @ WILLOW ST



CHERRY AVE @ WILLOW ST

NO SCALE

KEY

(#) = STUDY INTERSECTION
= APPROACH LANE ASSIGNMENT
● = TRAFFIC SIGNAL, ☚ = STOP SIGN
P = PARKING, NP = NO PARKING
U = UNDIVIDED, D = DIVIDED

2 = NUMBER OF TRAVEL LANES
(XX)= POSTED SPEED LIMIT (MPH)
OL = OVELAP
F = FREE-RIGHT
= PROJECT SITE

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3-11-1

Existing Year 2018 Roadway Conditions and Intersection Controls

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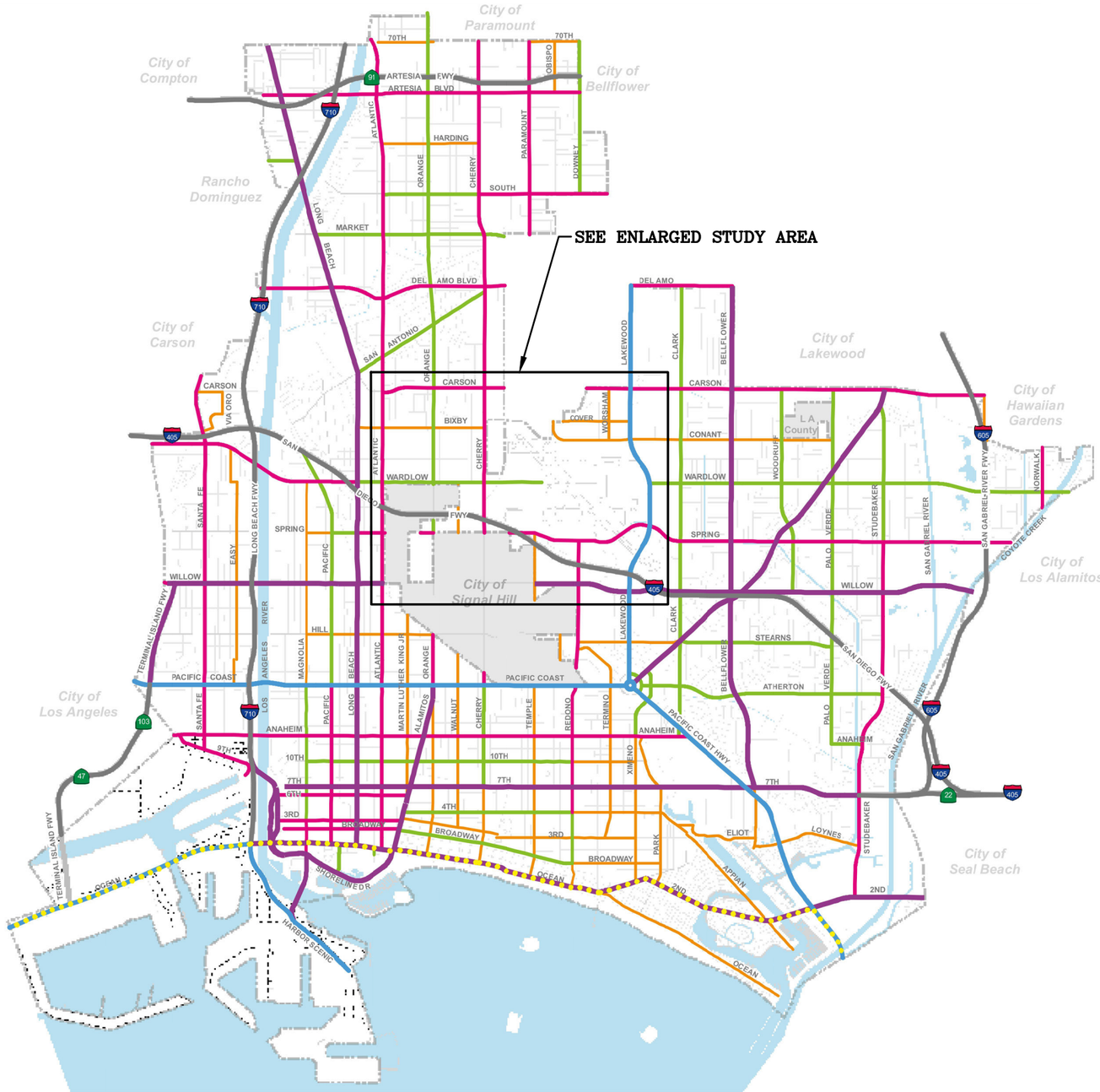
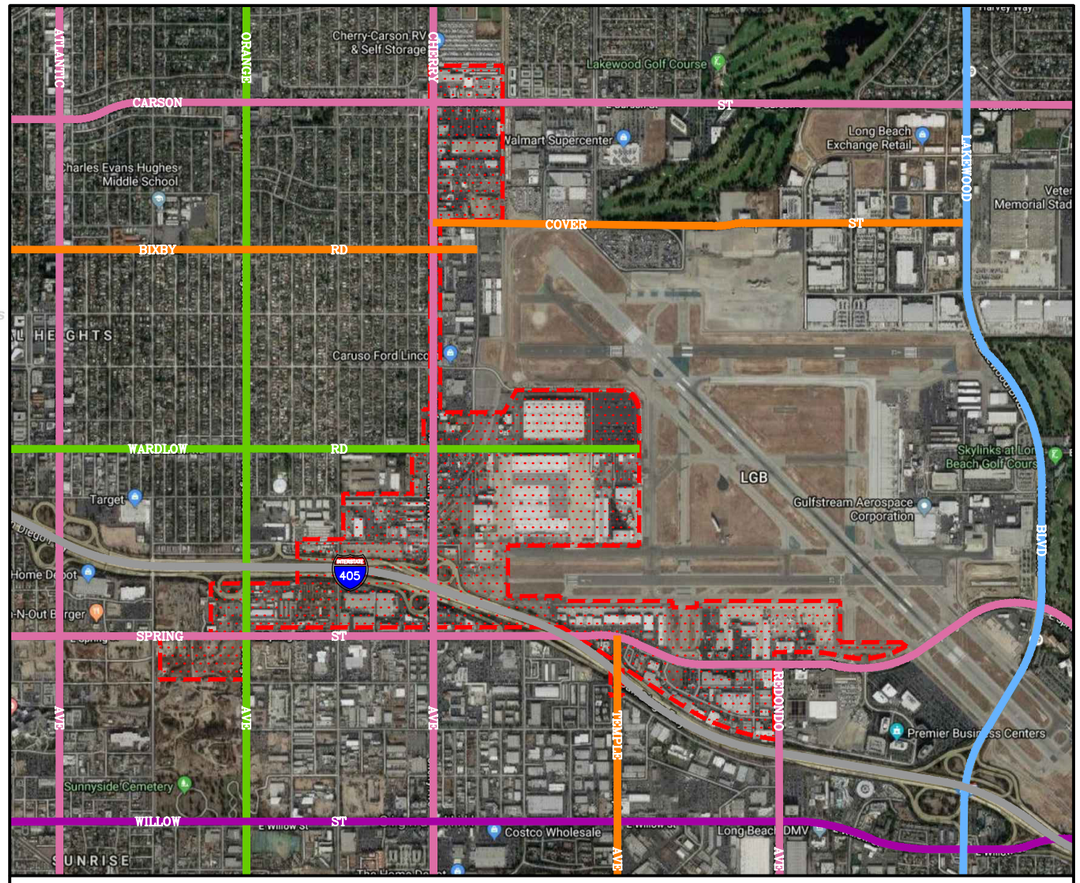


Legend

Classifications

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



ENLARGED STUDY AREA

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-2

Existing Year 2018 Street Classifications

Globemaster Corridor Specific Plan Draft PEIR/PEIS

DUDEK

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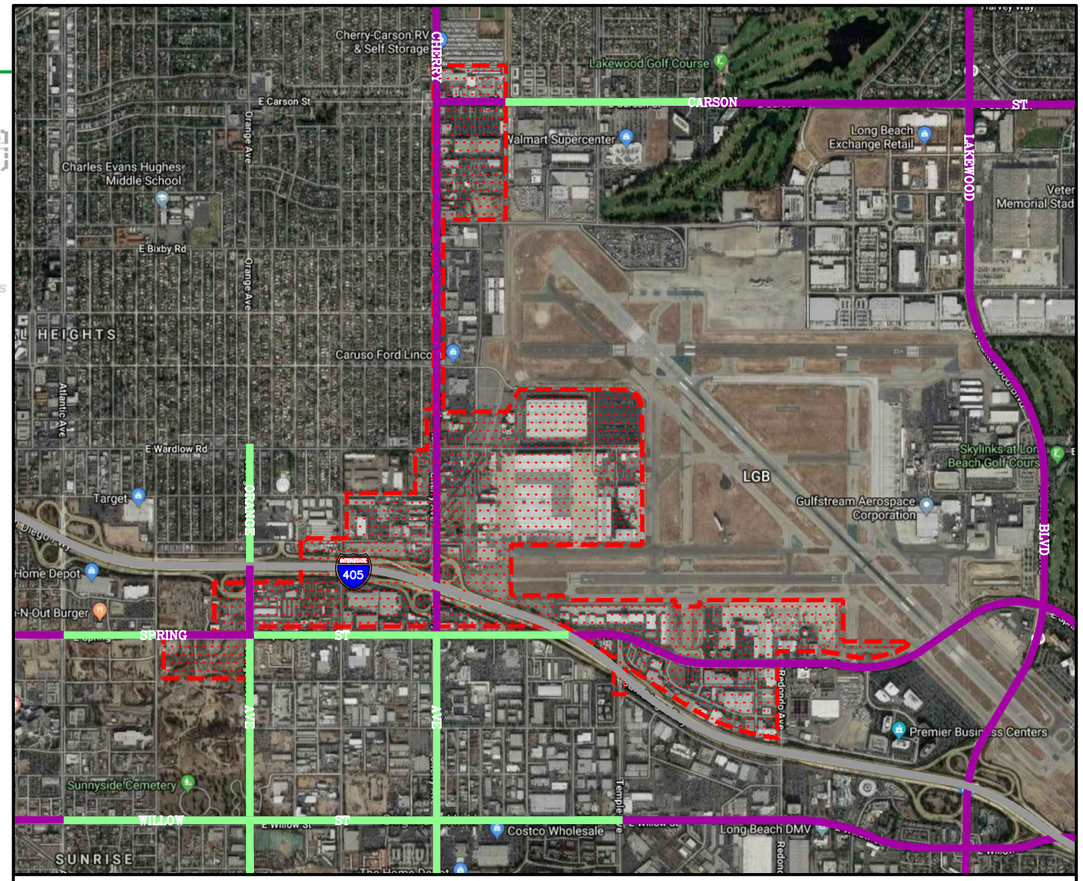

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-3

Existing Year 2018 Truck Routes

Globemaster Corridor Specific Plan Draft PEIR/PEIS

DUDEK

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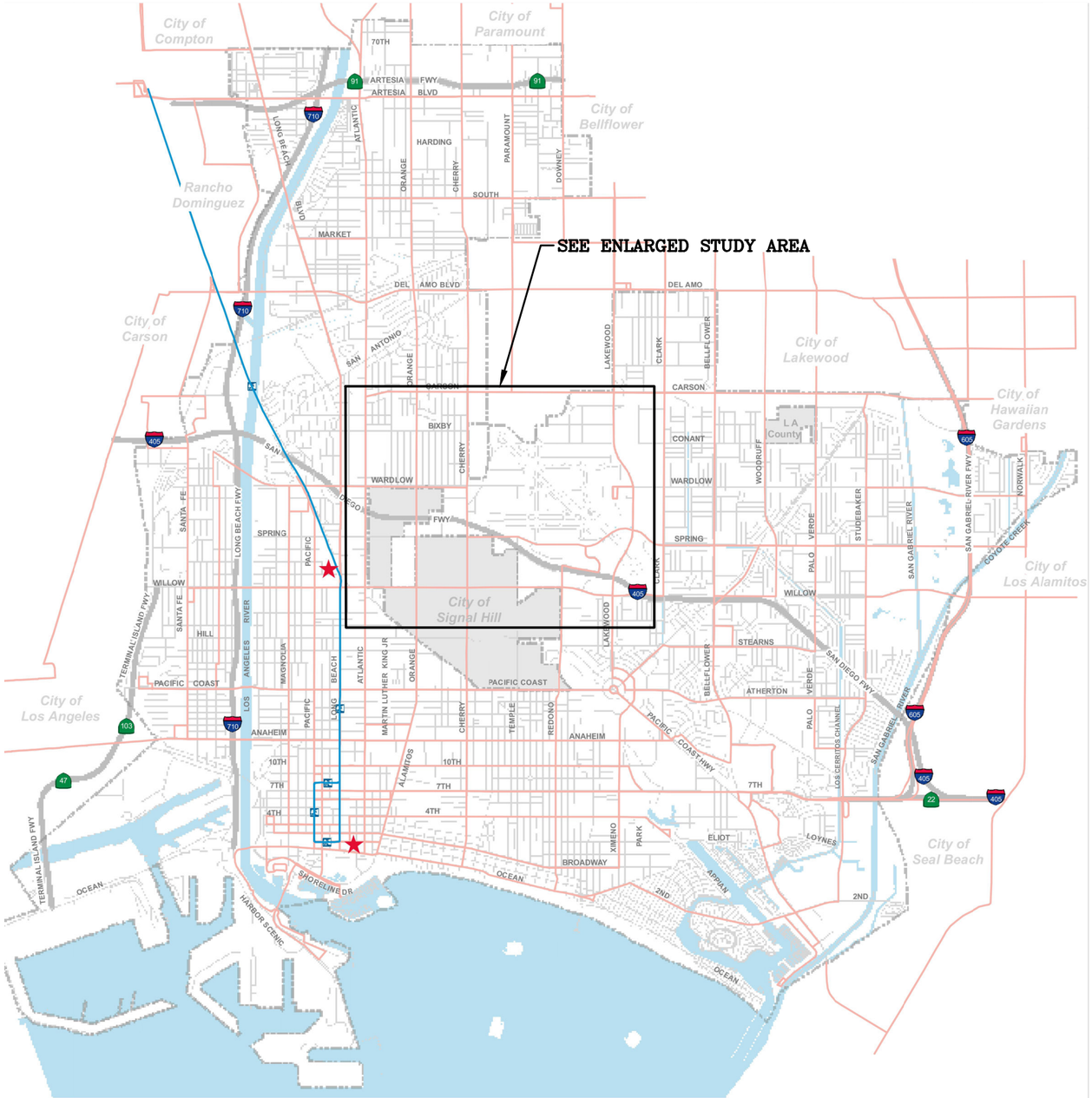
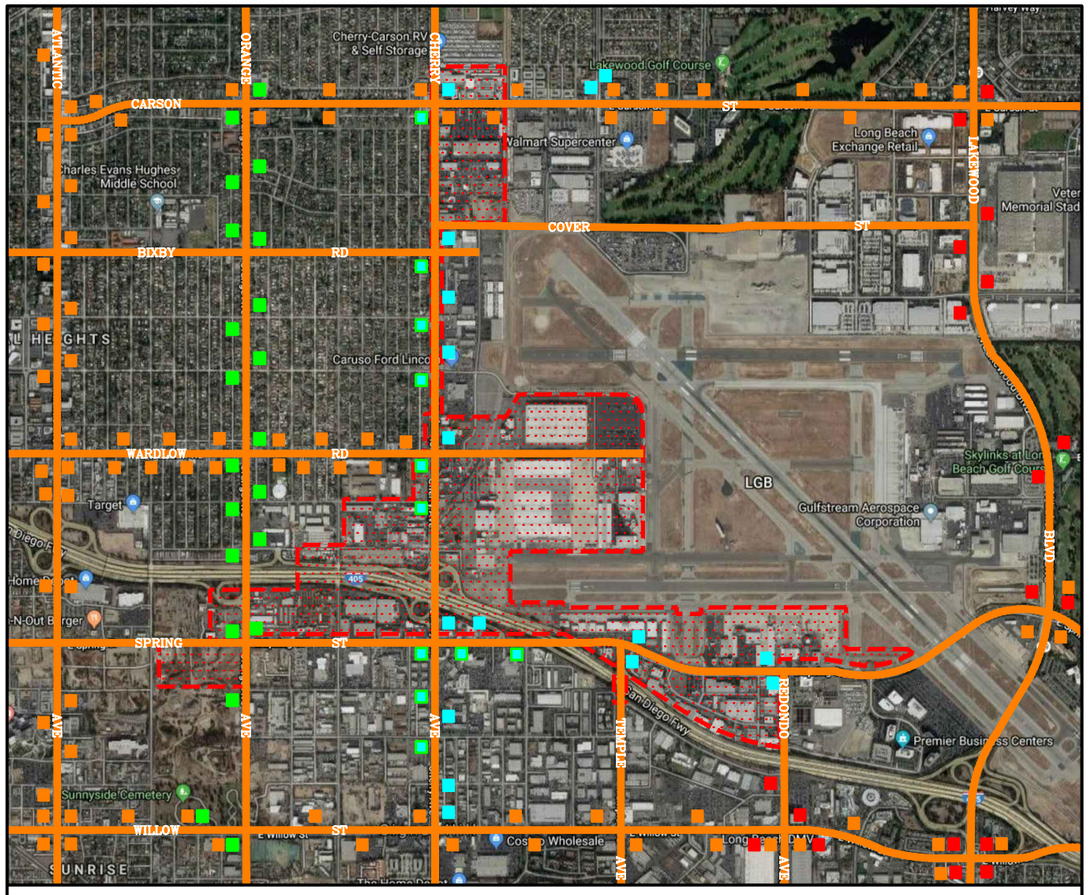


Legend

- Metro Rail Stations
- Metro Rail
- Bus Routes (includes LB Transit, Metro, and OCTA)
- Multimodal Hub
- **Bus Stops Routes: 21 – 23**
- **Bus Stops Routes: 61, 101–104, 131**
- **Bus Stops Routes: 71**
- **Bus Stops Routes: 111–112, 176**



ENLARGED STUDY AREA

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-4

Existing Year 2018 Public Transit

Globemaster Corridor Specific Plan Draft PEIR/PEIS

DUDEK

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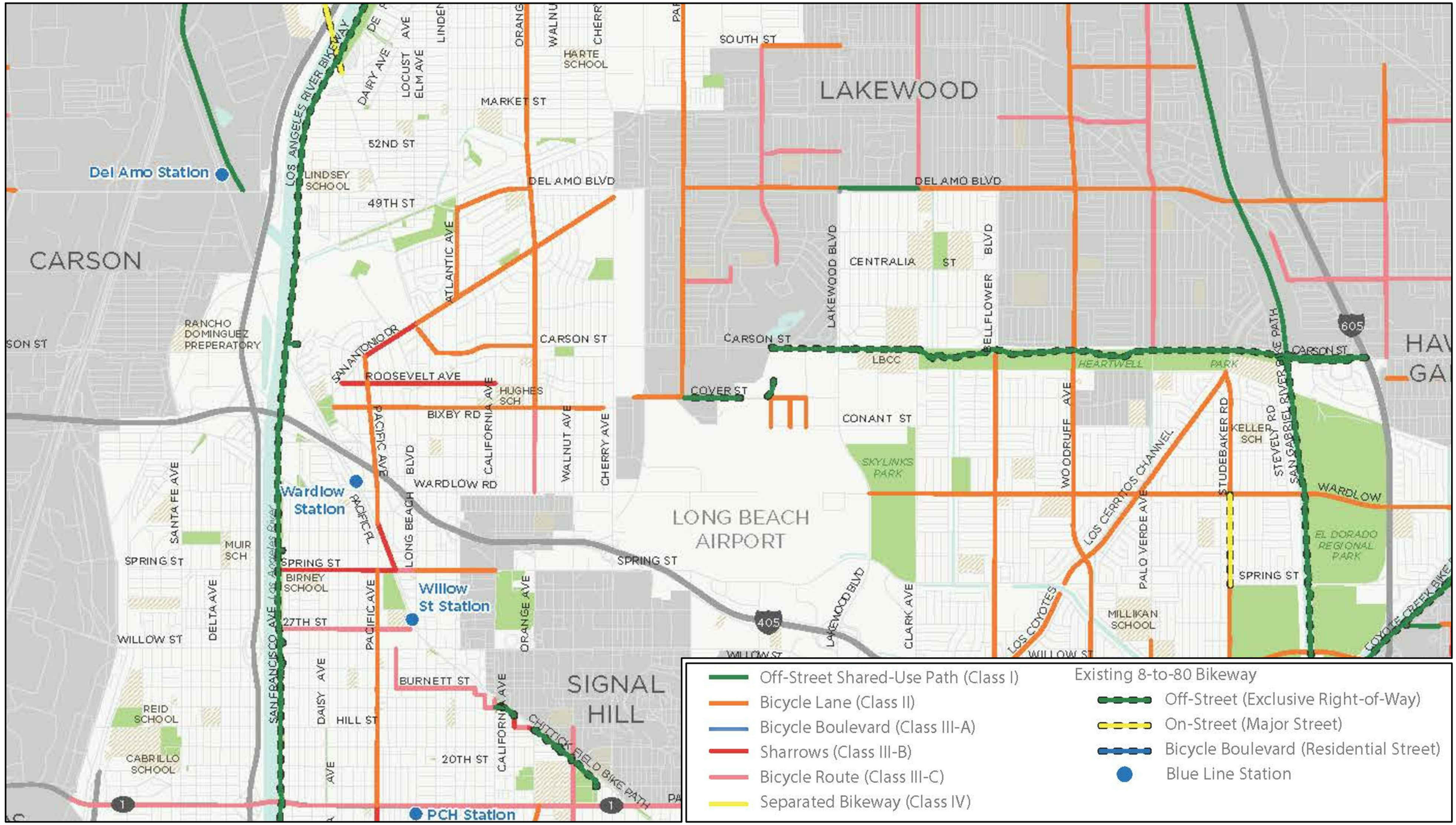


SOURCE: Lindscott Law & Greenspan Engineers, 2020

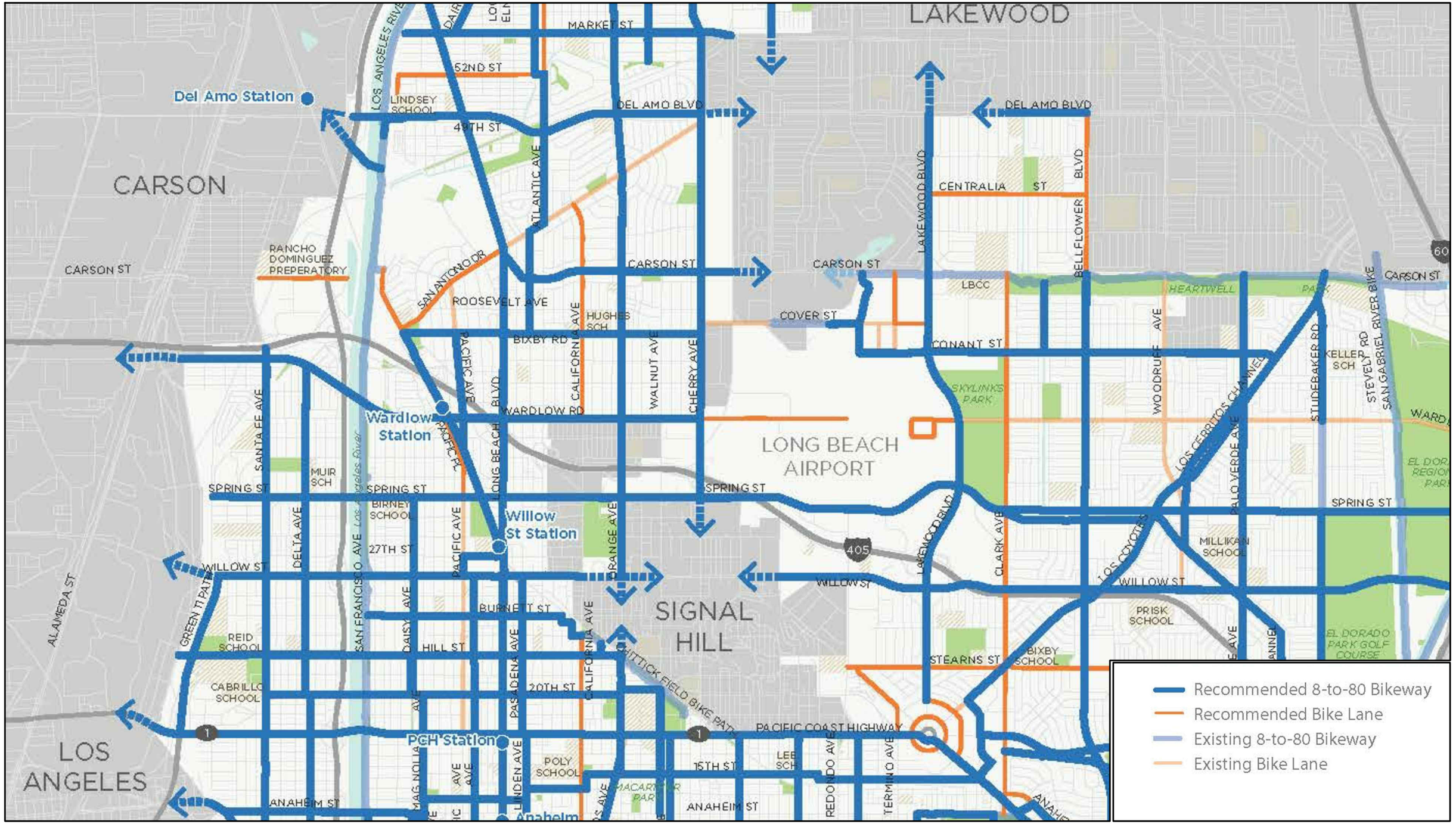
FIGURE 3.11-5A

Existing Bicycle Routes

Globemaster Corridor Specific Plan Draft PEIR/PEIS

DUDEK

INTENTIONALLY LEFT BLANK



SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-5B

Existing and Proposed "8-to-80" Bicycle Facilities

Globemaster Corridor Specific Plan Draft PEIR/PEIS

DUDEK

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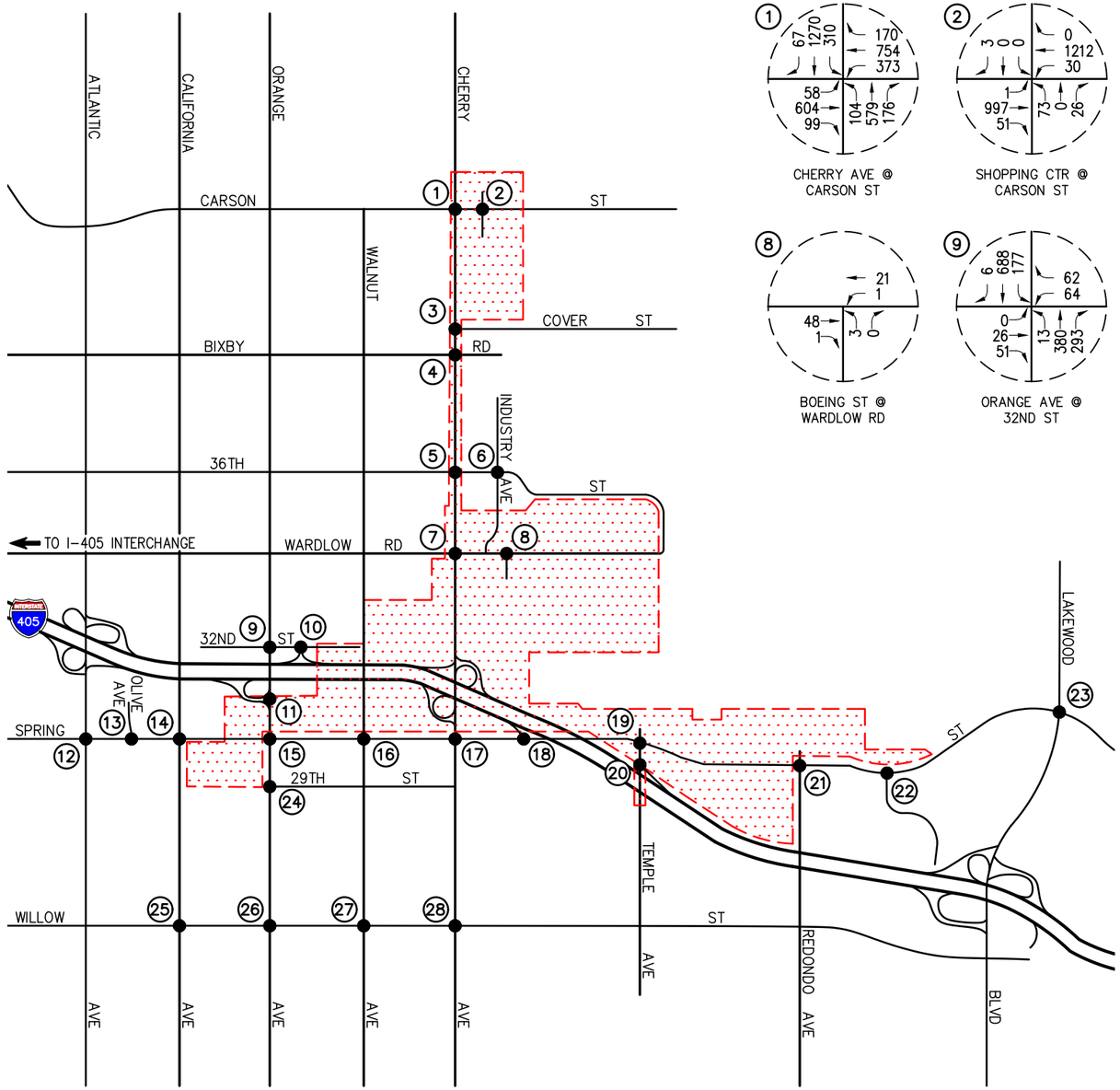
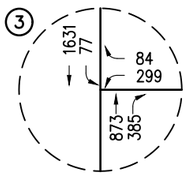
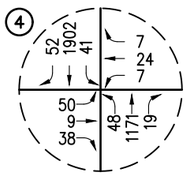


CHERRY AVE @ CARSON ST

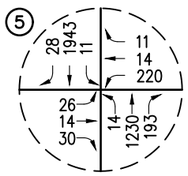
SHOPPING CTR @ CARSON ST



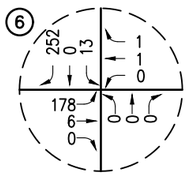
CHERRY AVE @ COVER ST



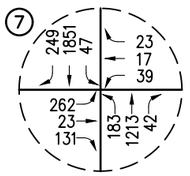
CHERRY AVE @ BIXBY RD



CHERRY AVE @ 36TH ST



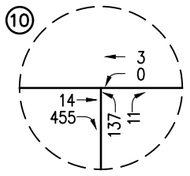
INDUSTRY AVE @ 36TH ST



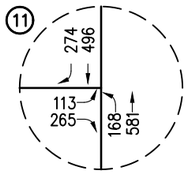
CHERRY AVE @ WARDLOW RD

BOEING ST @ WARDLOW RD

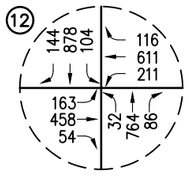
ORANGE AVE @ 32ND ST



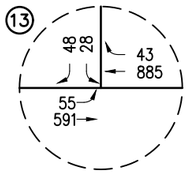
I-405 NB RAMPS @ 32ND ST



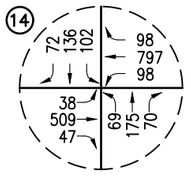
ORANGE AE @ I-405 SB RAMPS



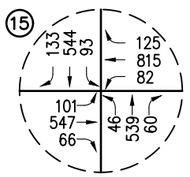
ATLANTIC AVE @ SPRING ST



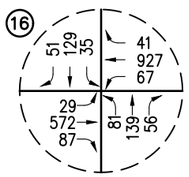
OLIVE AVE @ SPRING ST



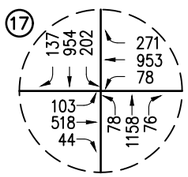
CALIFORNIA AVE @ SPRING ST



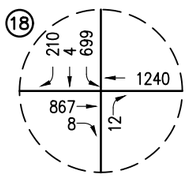
ORANGE AVE @ SPRING ST



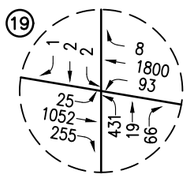
WALNUT AVE @ SPRING ST



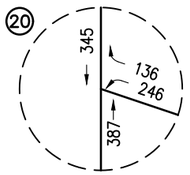
CHERRY AVE @ SPRING ST



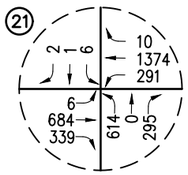
I-405 SB OFF-RAMPS @ SPRING ST



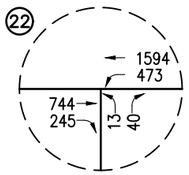
TEMPLE AVE @ SPRING ST



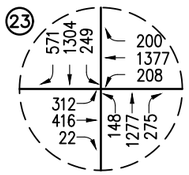
TEMPLE AVE @ I-405 NB OFF-RAMPS



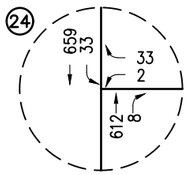
REDONDO AVE @ SPRING ST



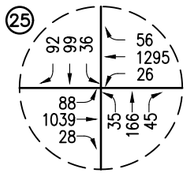
KILROY AIRPORT WAY @ SPRING ST



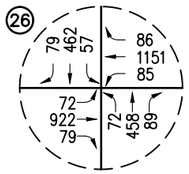
LAKEWOOD BLVD @ SPRING ST



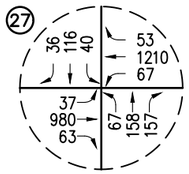
ORANGE AVE @ 29TH ST



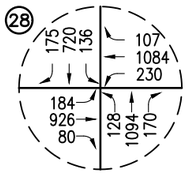
CALIFORNIA AVE @ WILLOW ST



ORANGE AVE @ WILLOW ST



WALNUT AVE @ WILLOW ST



CHERRY AVE @ WILLOW ST

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-6

Existing (Year 2018) AM Peak Hour Traffic Volumes

Globemaster Corridor Specific Plan Draft PEIR/PEIS

DUDEK

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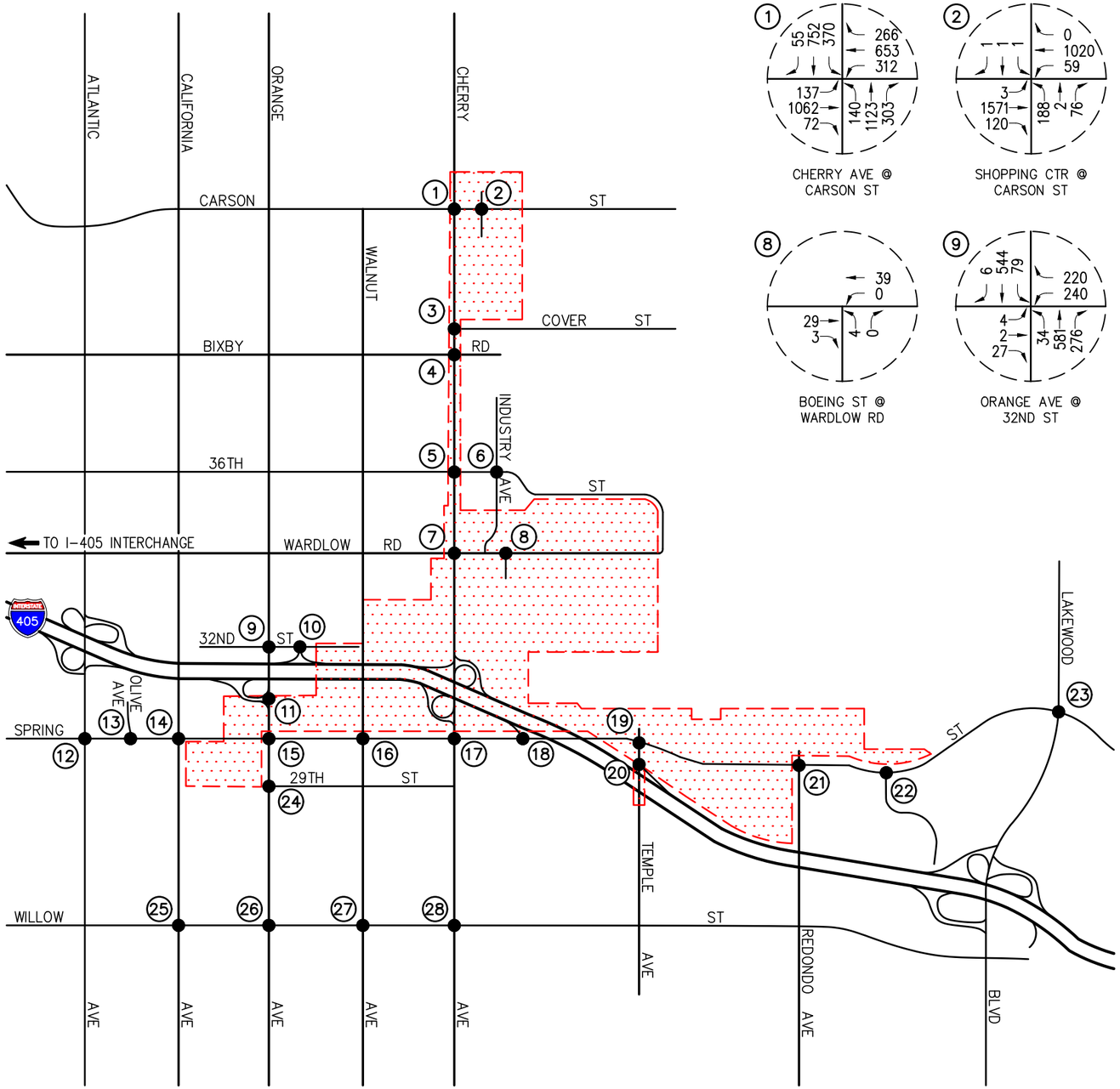
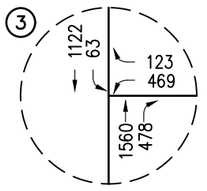
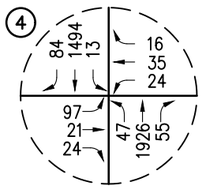


CHERRY AVE @ CARSON ST

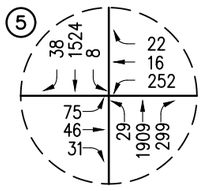
SHOPPING CTR @ CARSON ST



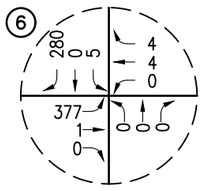
CHERRY AVE @ COVER ST



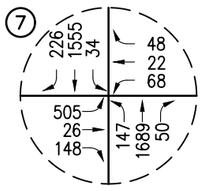
CHERRY AVE @ BIXBY RD



CHERRY AVE @ 36TH ST



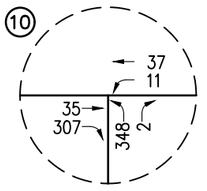
INDUSTRY AVE @ 36TH ST



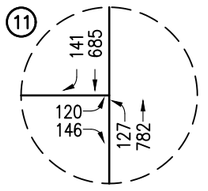
CHERRY AVE @ WARDLOW RD

BOEING ST @ WARDLOW RD

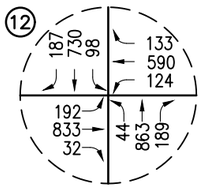
ORANGE AVE @ 32ND ST



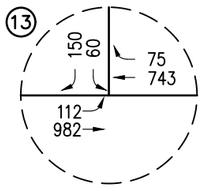
I-405 NB RAMPS @ 32ND ST



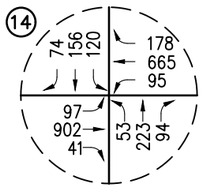
ORANGE AE @ I-405 SB RAMPS



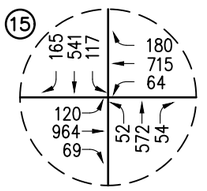
ATLANTIC AVE @ SPRING ST



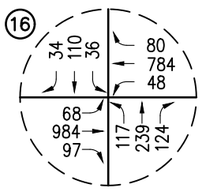
OLIVE AVE @ SPRING ST



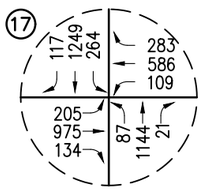
CALIFORNIA AVE @ SPRING ST



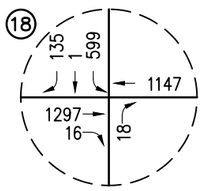
ORANGE AVE @ SPRING ST



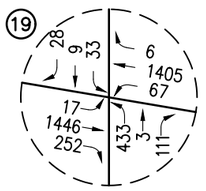
WALNUT AVE @ SPRING ST



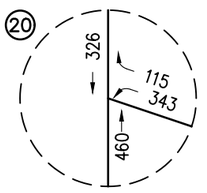
CHERRY AVE @ SPRING ST



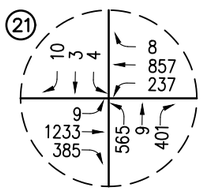
I-405 SB OFF-RAMPS @ SPRING ST



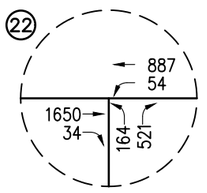
TEMPLE AVE @ SPRING ST



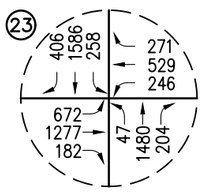
TEMPLE AVE @ I-405 NB OFF-RAMPS



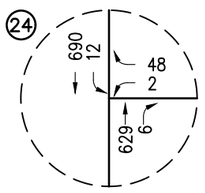
REDONDO AVE @ SPRING ST



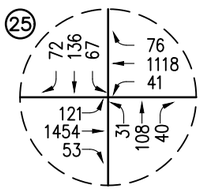
KILROY AIRPORT WAY @ SPRING ST



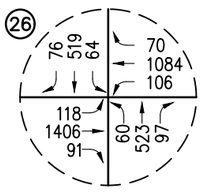
LAKEWOOD BLVD @ SPRING ST



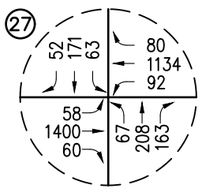
ORANGE AVE @ 29TH ST



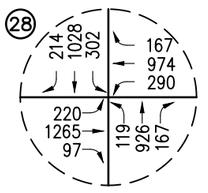
CALIFORNIA AVE @ WILLOW ST



ORANGE AVE @ WILLOW ST



WALNUT AVE @ WILLOW ST



CHERRY AVE @ WILLOW ST

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-7

Existing (Year 2018) PM Peak Hour Traffic Volumes

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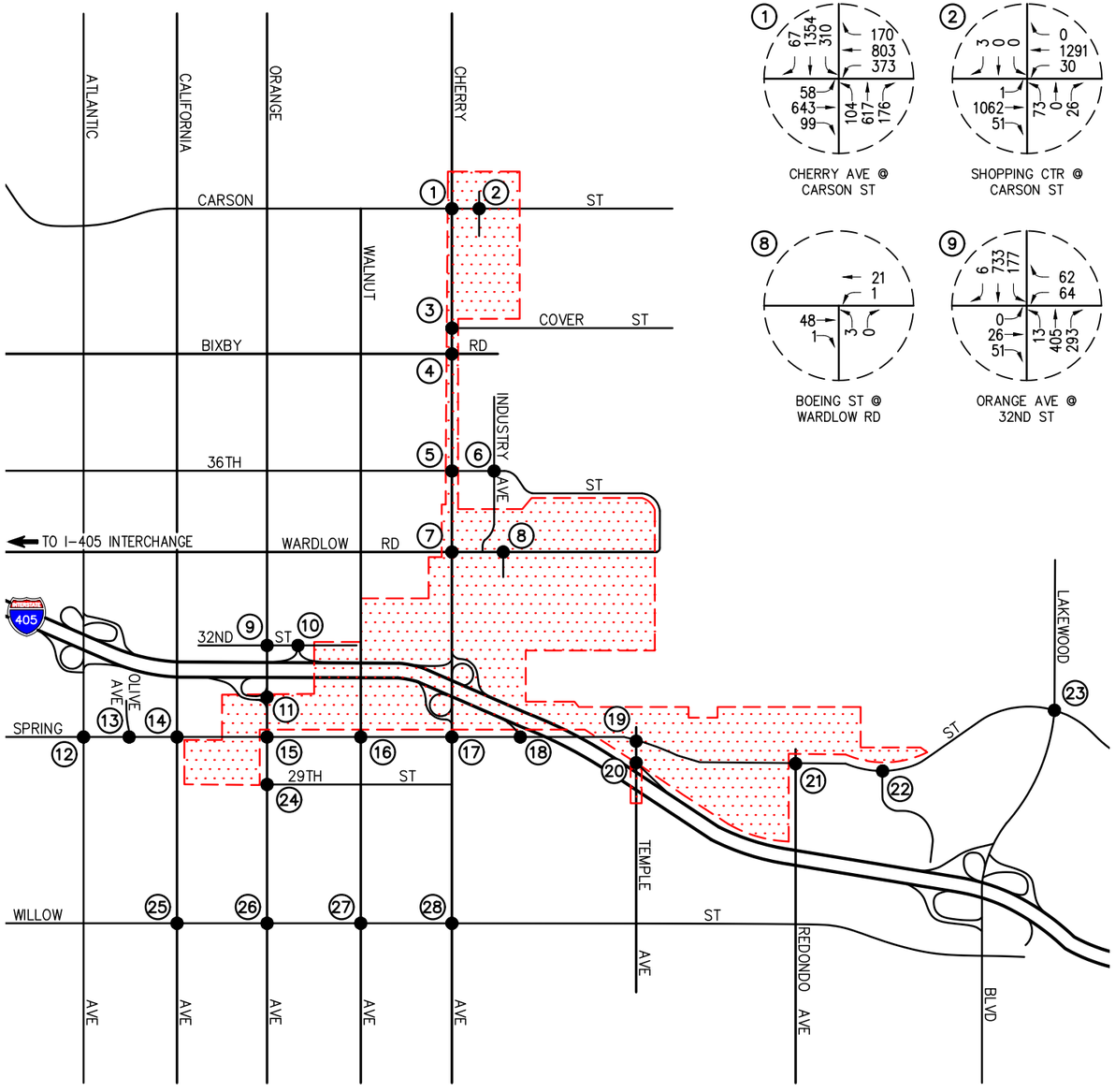
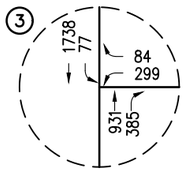
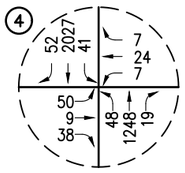


CHERRY AVE @ CARSON ST

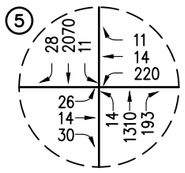
SHOPPING CTR @ CARSON ST



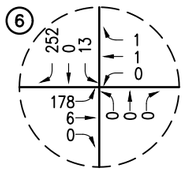
CHERRY AVE @ COVER ST



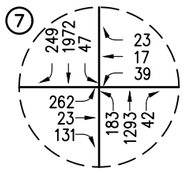
CHERRY AVE @ BIXBY RD



CHERRY AVE @ 36TH ST



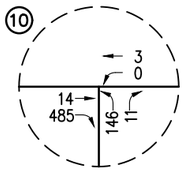
INDUSTRY AVE @ 36TH ST



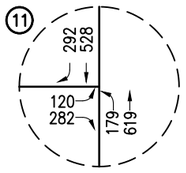
CHERRY AVE @ WARDLOW RD

BOEING ST @ WARDLOW RD

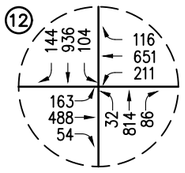
ORANGE AVE @ 32ND ST



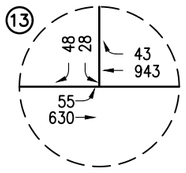
I-405 NB RAMPS @ 32ND ST



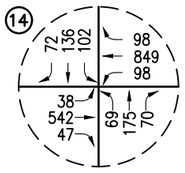
ORANGE AE @ I-405 SB RAMPS



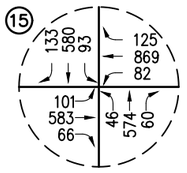
ATLANTIC AVE @ SPRING ST



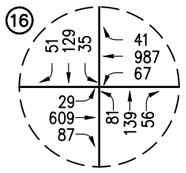
OLIVE AVE @ SPRING ST



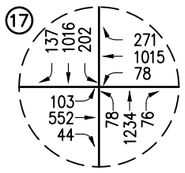
CALIFORNIA AVE @ SPRING ST



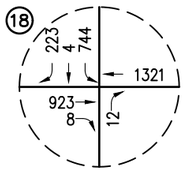
ORANGE AVE @ SPRING ST



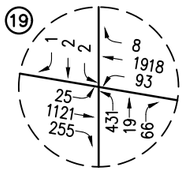
WALNUT AVE @ SPRING ST



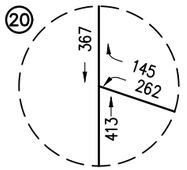
CHERRY AVE @ SPRING ST



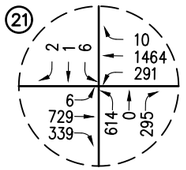
I-405 SB OFF-RAMPS @ SPRING ST



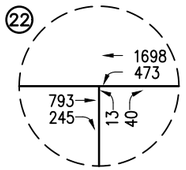
TEMPLE AVE @ SPRING ST



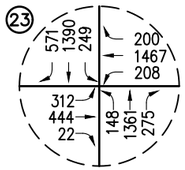
TEMPLE AVE @ I-405 NB OFF-RAMPS



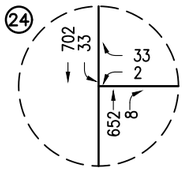
REDONDO AVE @ SPRING ST



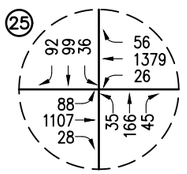
KILROY AIRPORT WAY @ SPRING ST



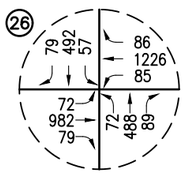
LAKEWOOD BLVD @ SPRING ST



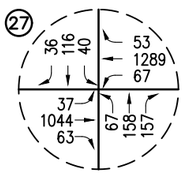
ORANGE AVE @ 29TH ST



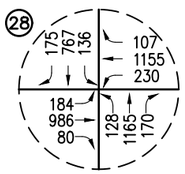
CALIFORNIA AVE @ WILLOW ST



ORANGE AVE @ WILLOW ST



WALNUT AVE @ WILLOW ST



CHERRY AVE @ WILLOW ST

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

N

NO SCALE

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-8

Year 2040 Baseline AM Peak Hour Traffic Volumes

Globemaster Corridor Specific Plan Draft PEIR/PEIS

DUDEK

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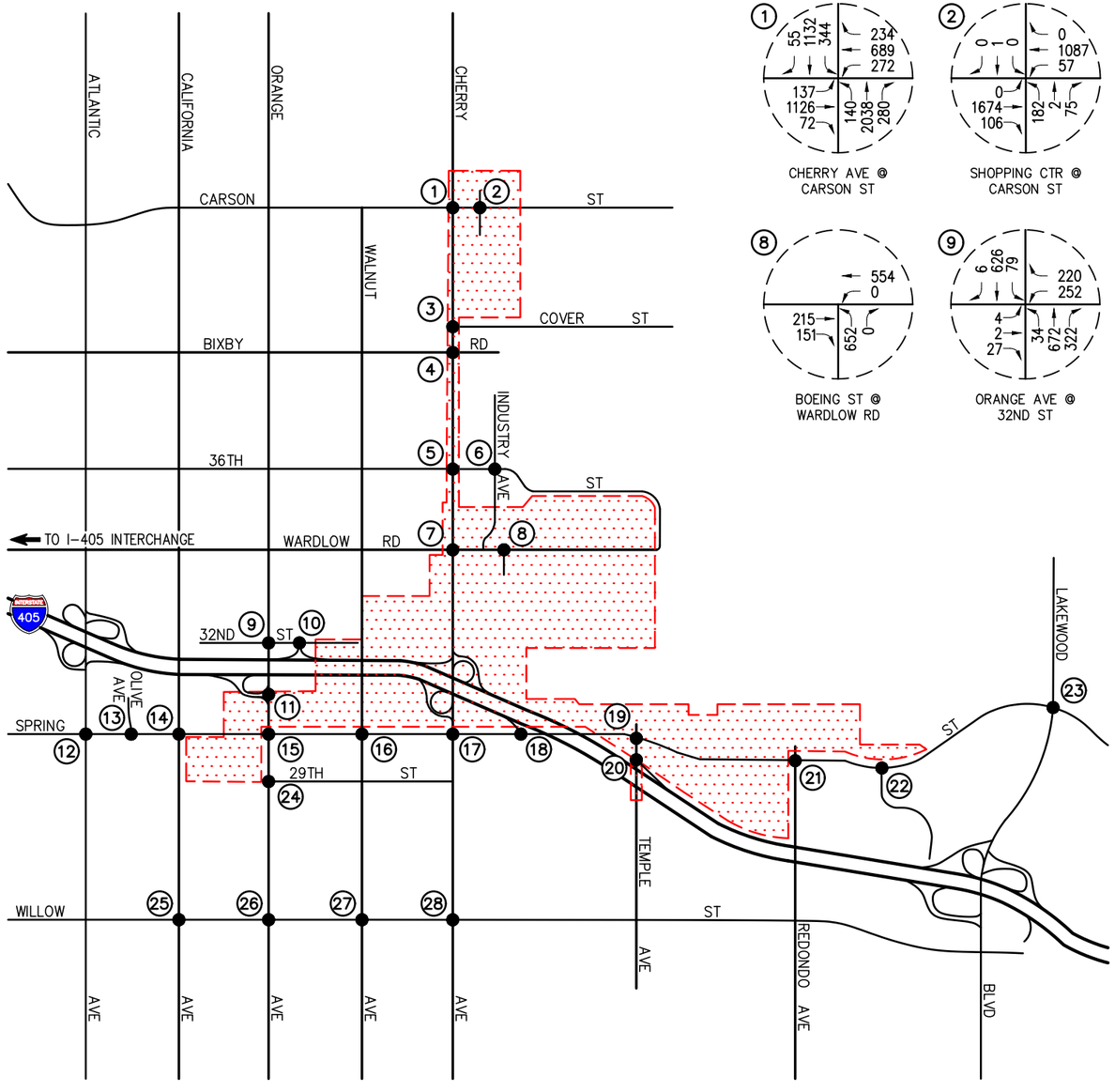

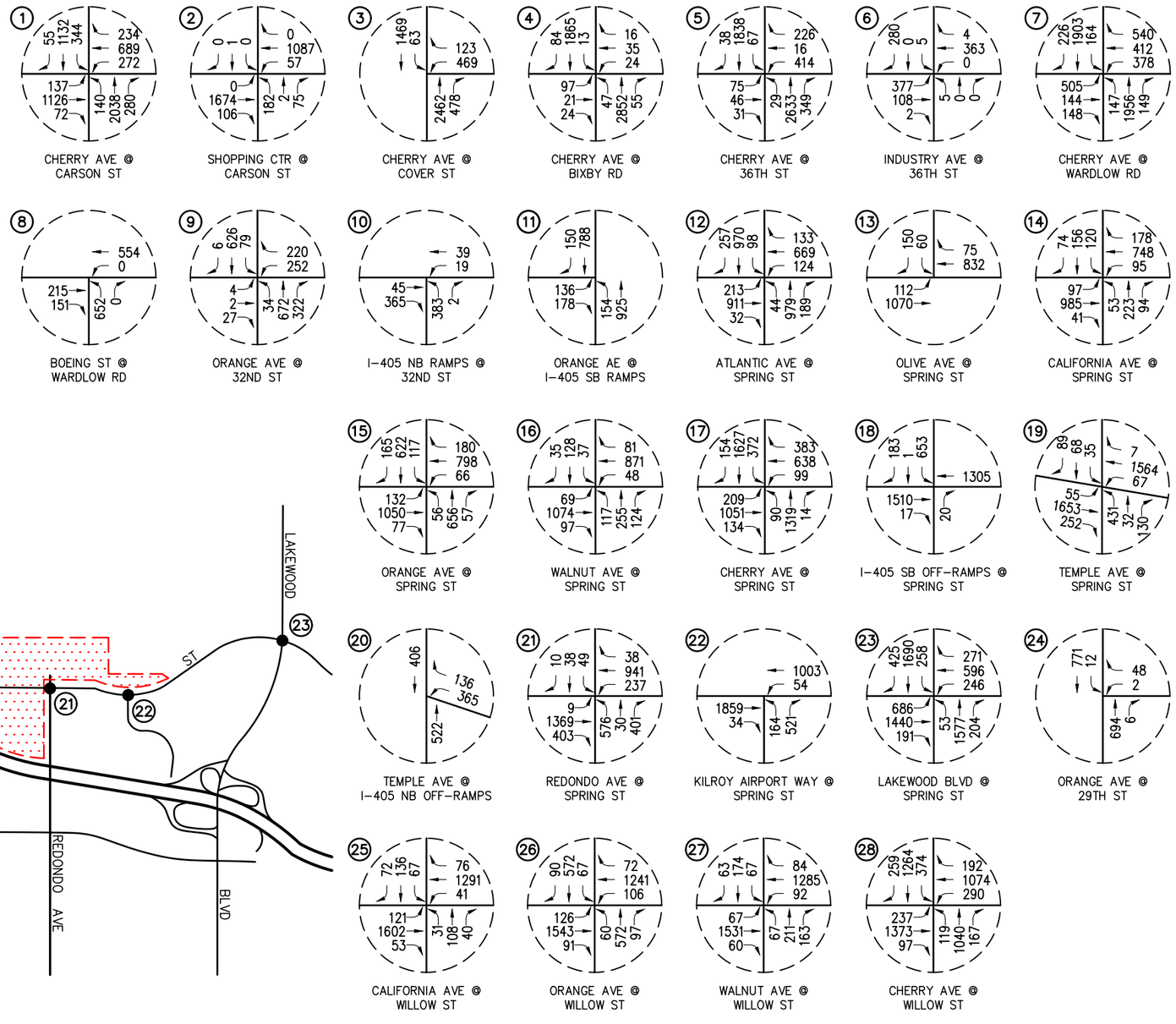

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

N

NO SCALE

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-9

Year 2040 Plus Project PM Peak Hour Traffic Volumes

Globemaster Corridor Specific Plan Draft PEIR/PEIS

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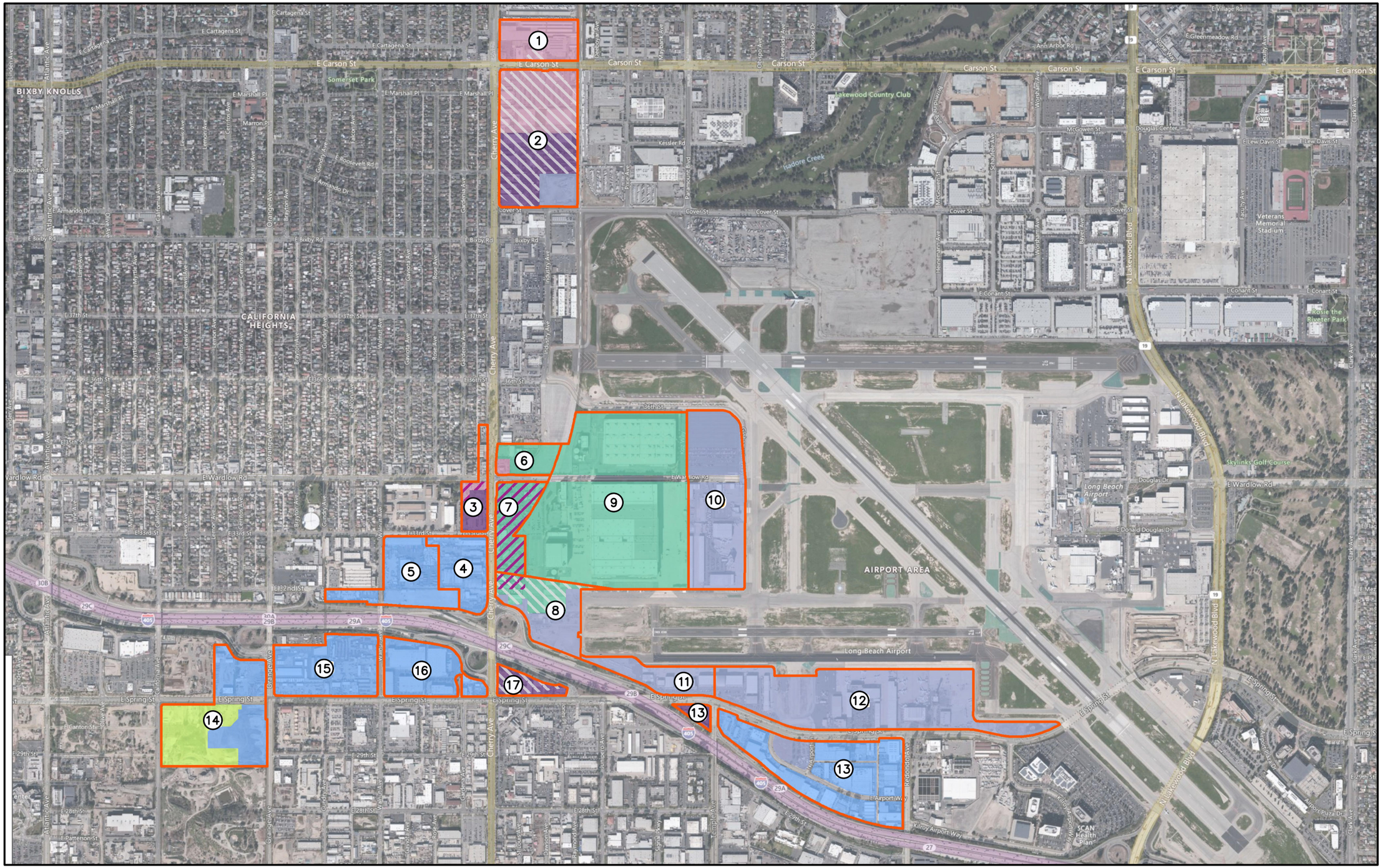

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-10

Globemaster Corridor Specific Plan TAZ Map

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SOURCE: Lindscott Law & Greenspan Engineers, 2020

DUDEK

FIGURE 3.11-11A
Project Trip Distribution Pattern (Passenger Cars)
Globemaster Corridor Specific Plan Draft PEIR/PEIS

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SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-11B

Project Trip Distribution Pattern (Trucks)

Globemaster Corridor Specific Plan Draft PEIR/PEIS

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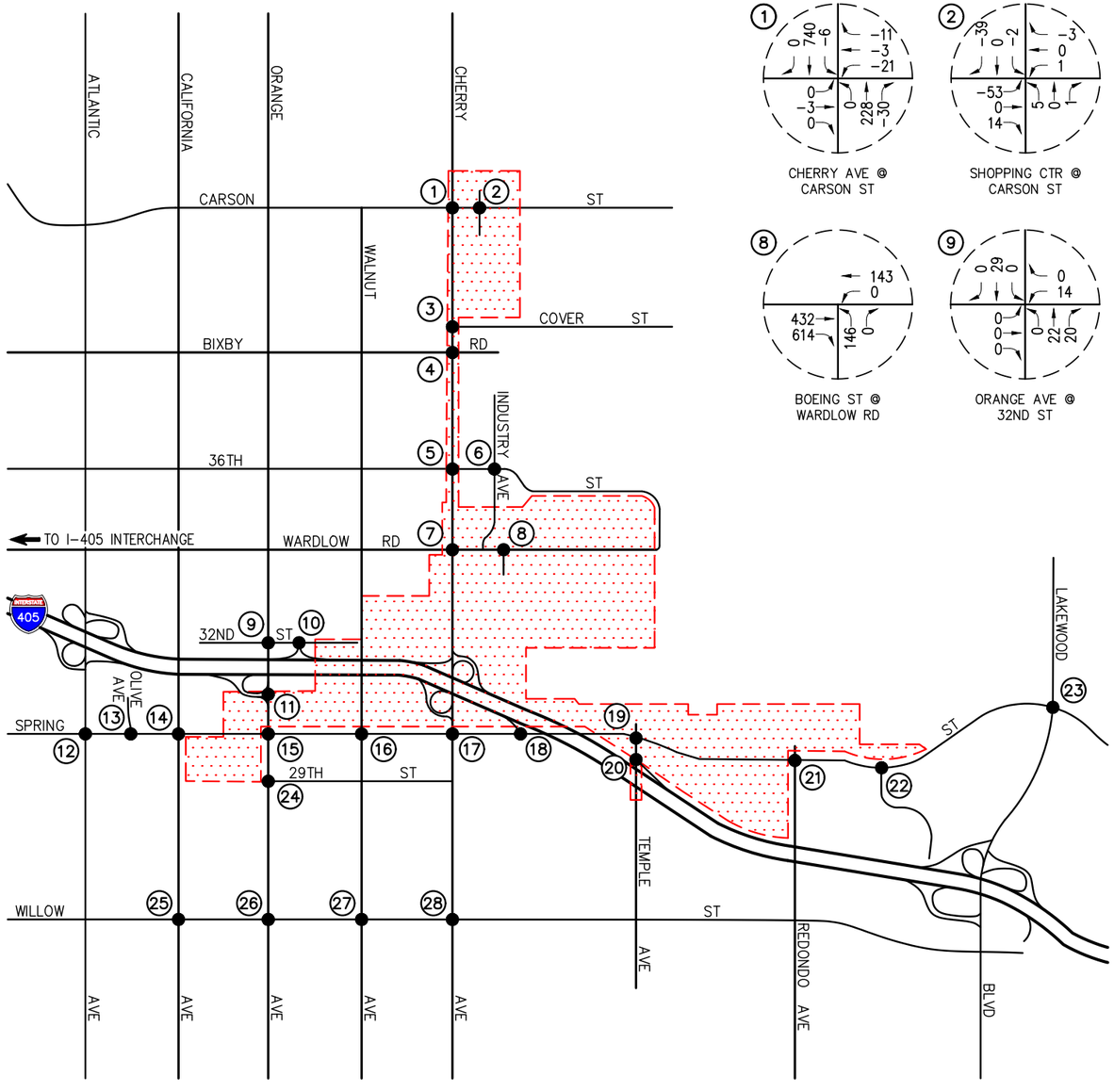

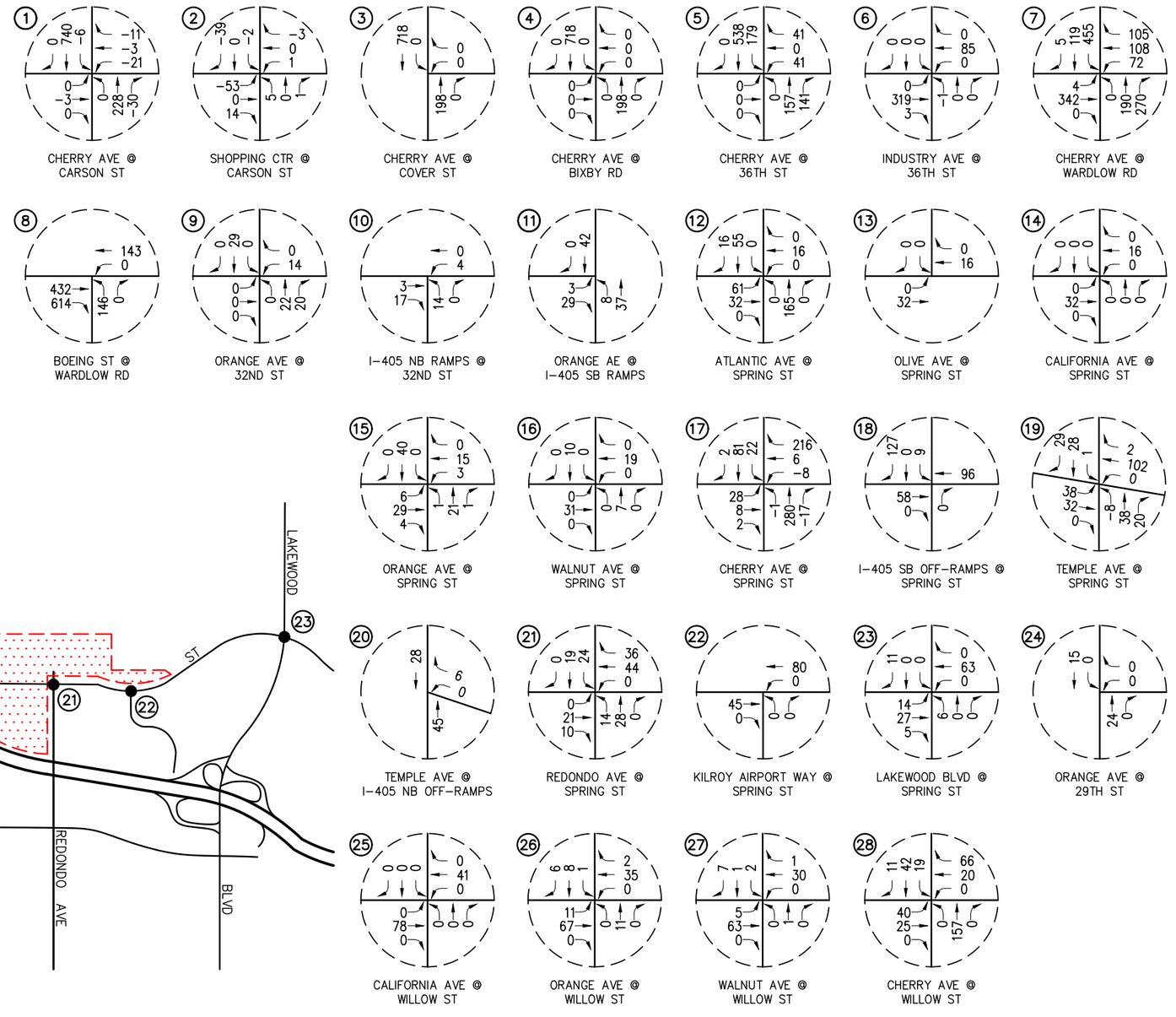

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-12

AM Peak Hour Project Only Traffic Volumes

Globemaster Corridor Specific Plan Draft PEIR/PEIS

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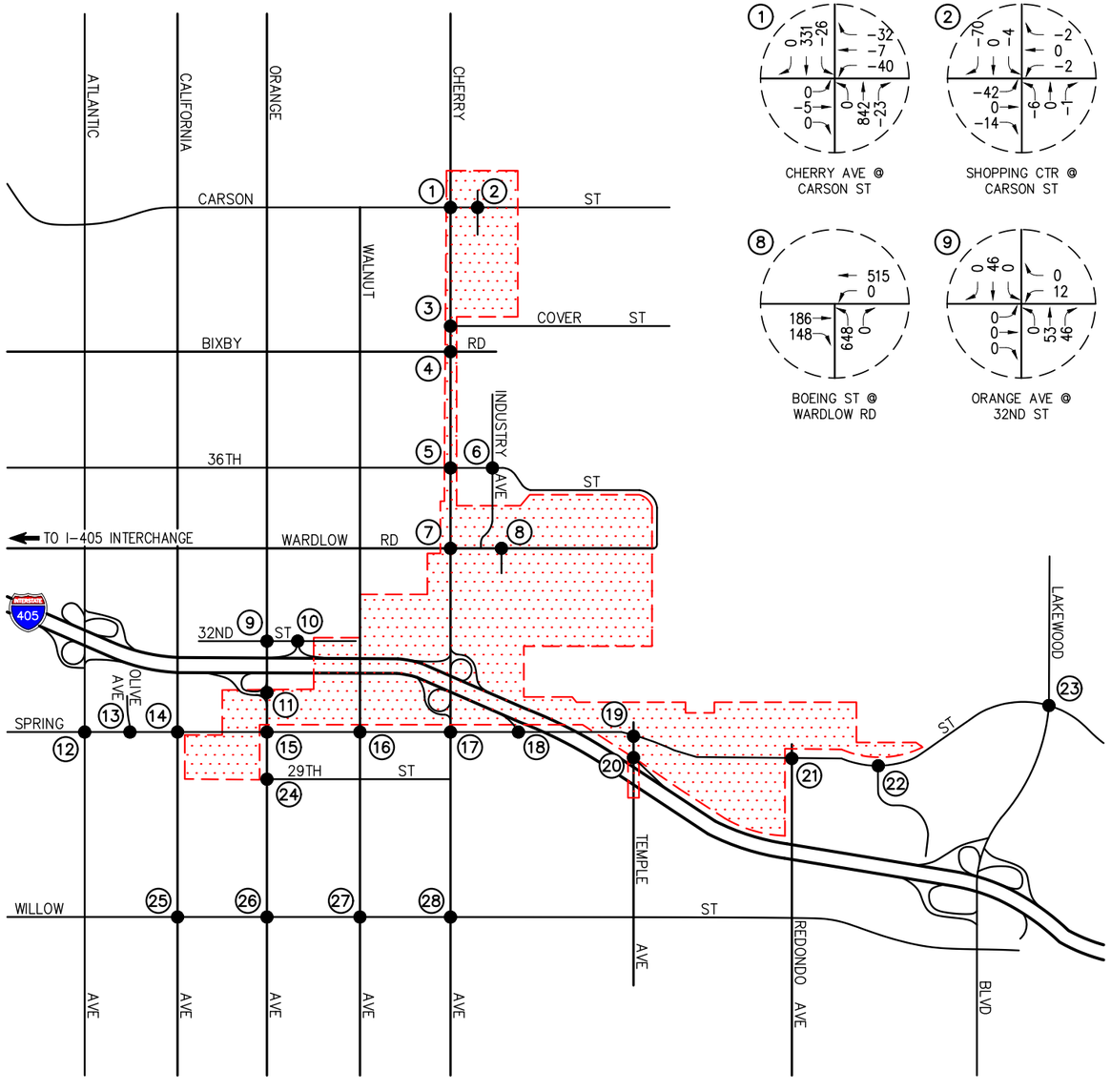

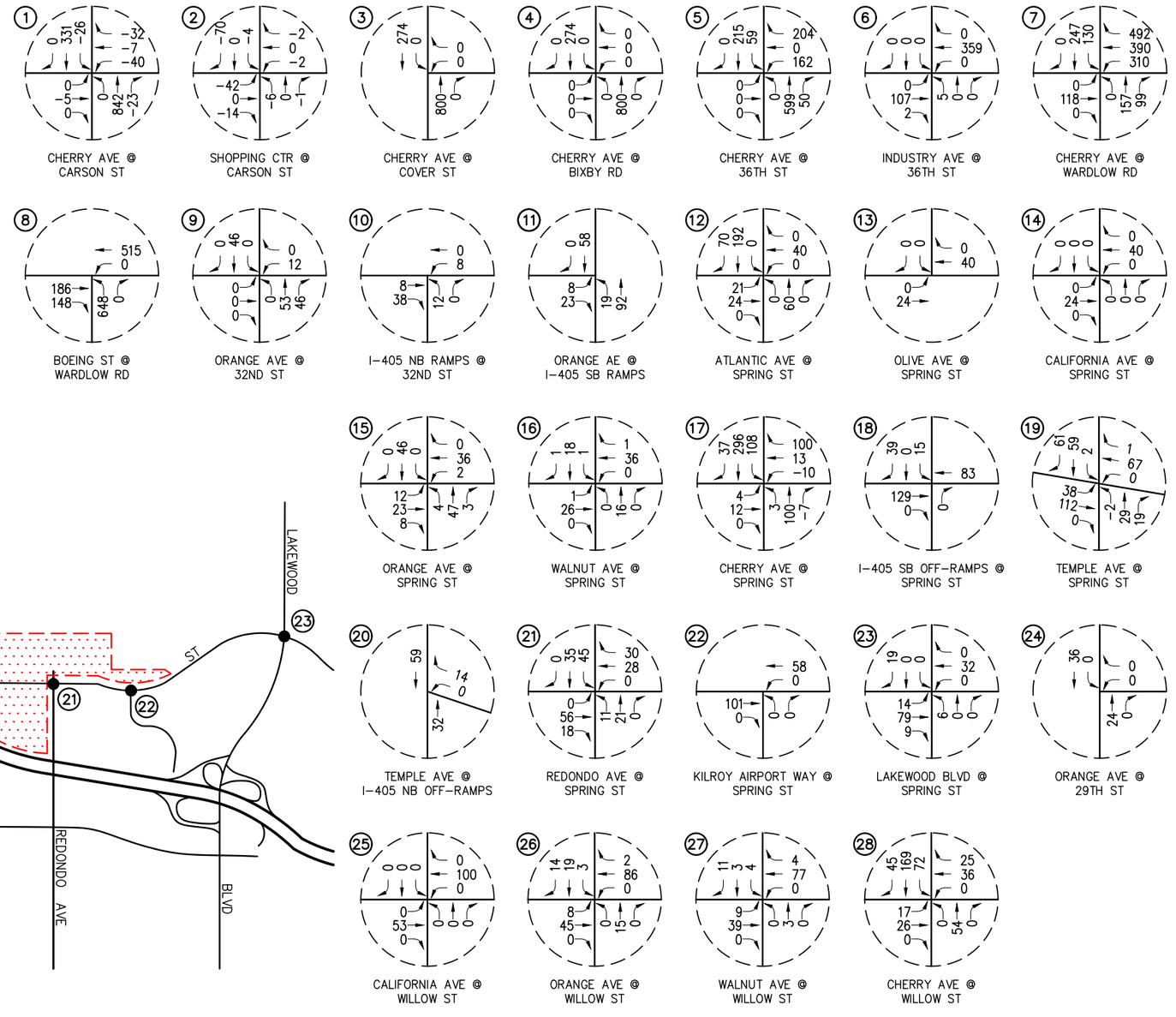

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(#) = STUDY INTERSECTION

= PROJECT SITE

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-13

PM Peak Hour Project Only Traffic Volumes

Globemaster Corridor Specific Plan Draft PEIR/PEIS

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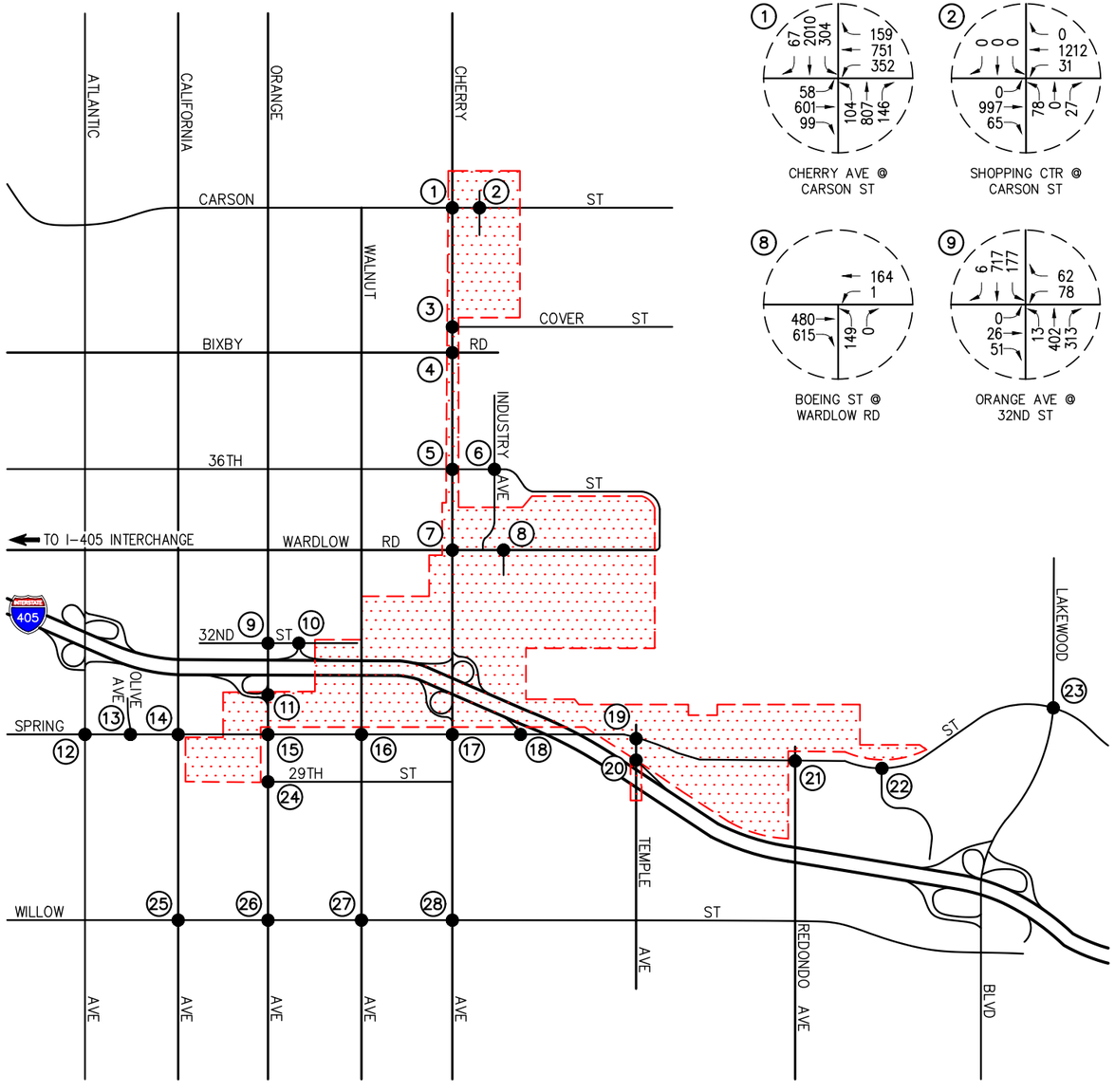

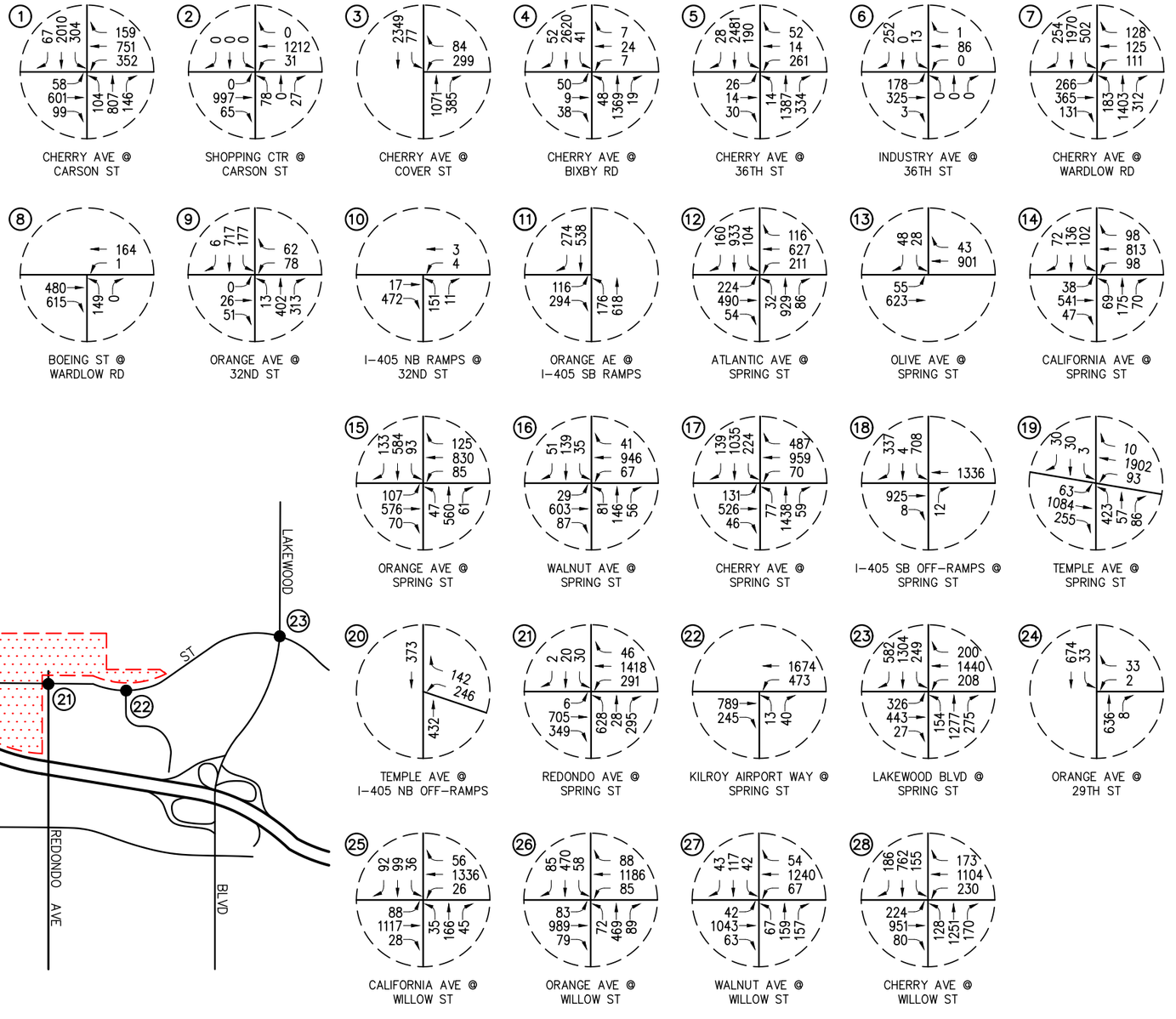

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

N NO SCALE

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-14

Existing (Year 2018) Plus Project AM Peak Hour Traffic Volumes

Globemaster Corridor Specific Plan Draft PEIR/PEIS

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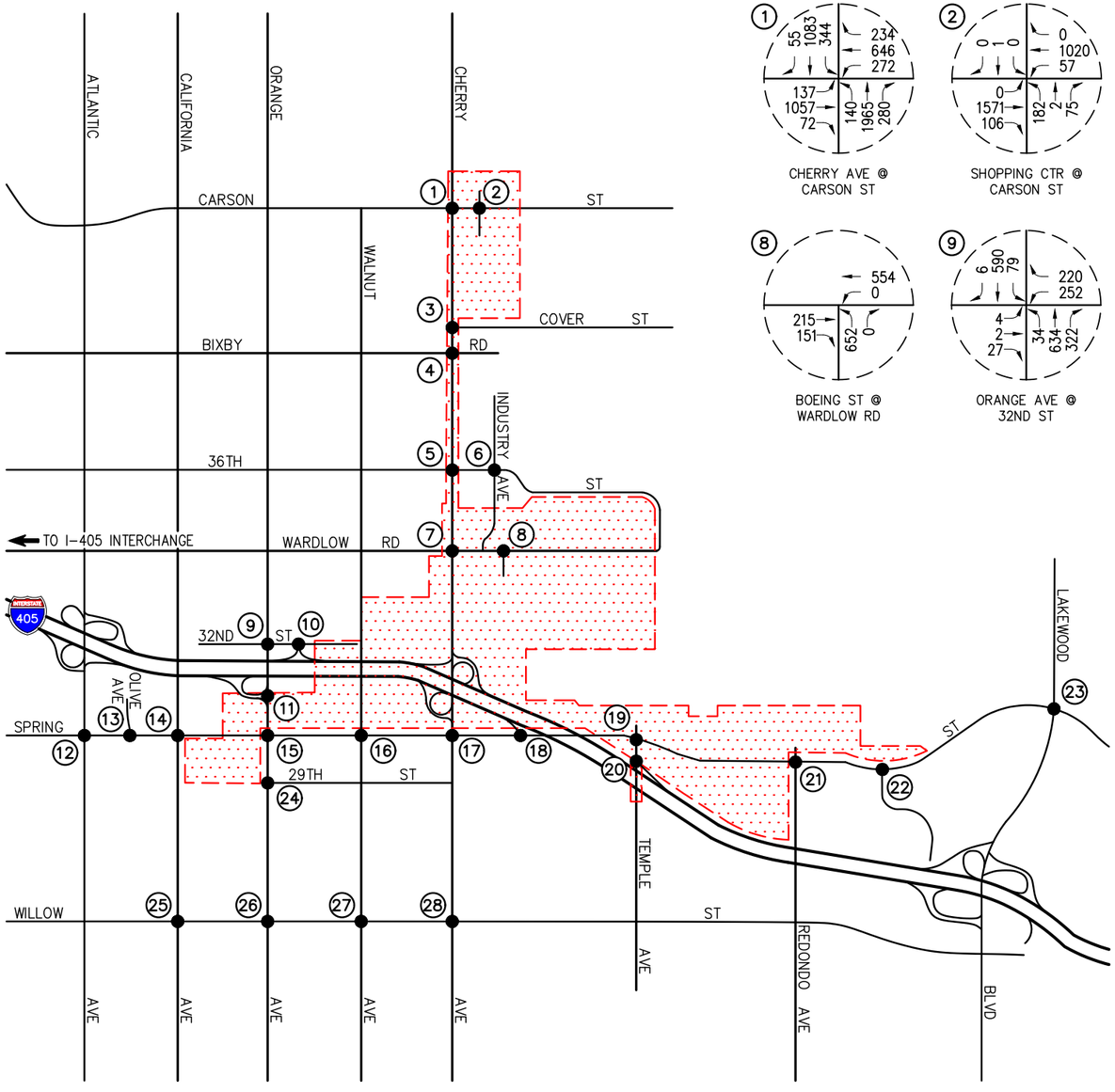

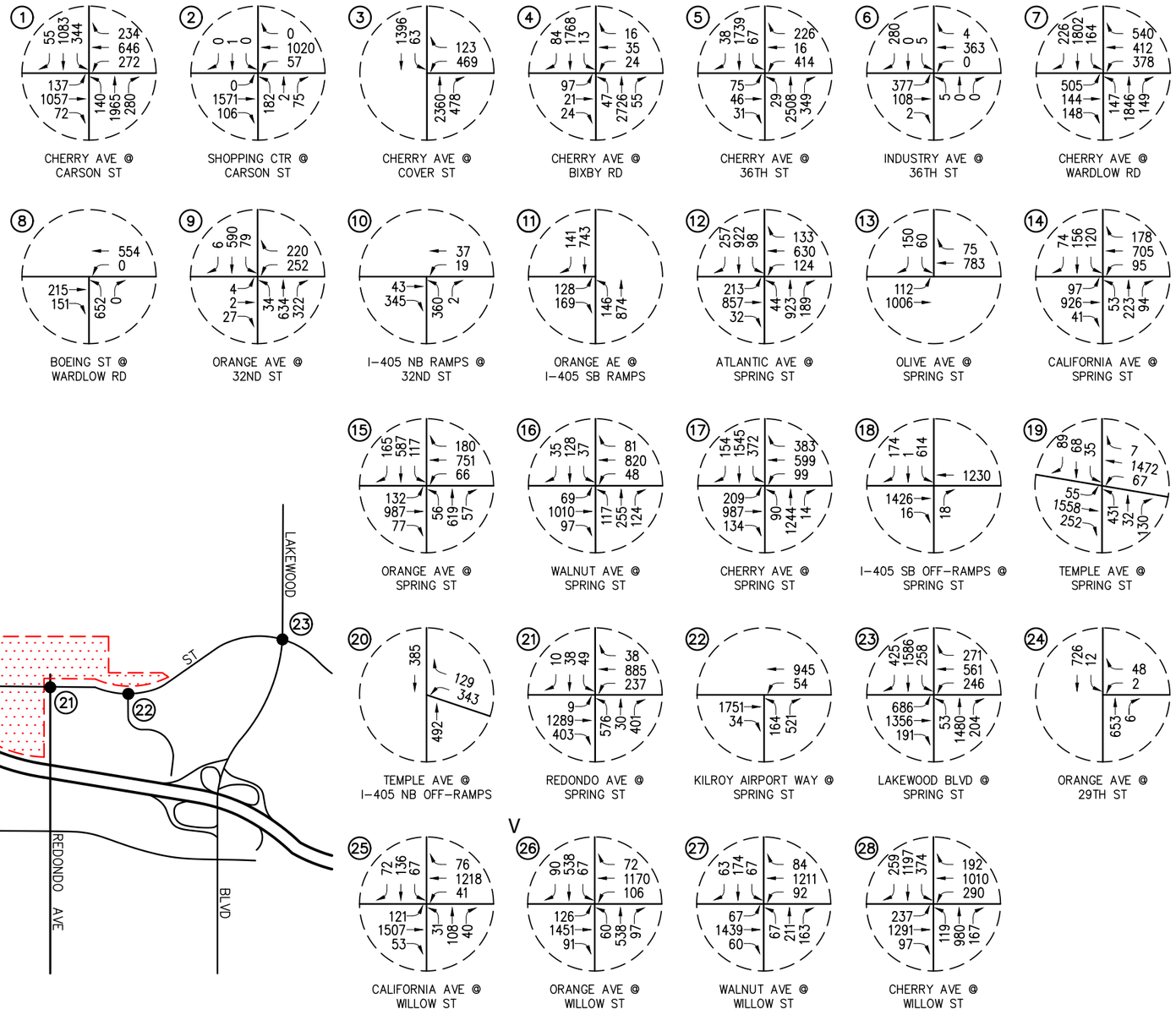

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-15

Existing (Year 2018) Plus Project PM Peak Hour Traffic Volumes

Globemaster Corridor Specific Plan Draft PEIR/PEIS

DUDEK

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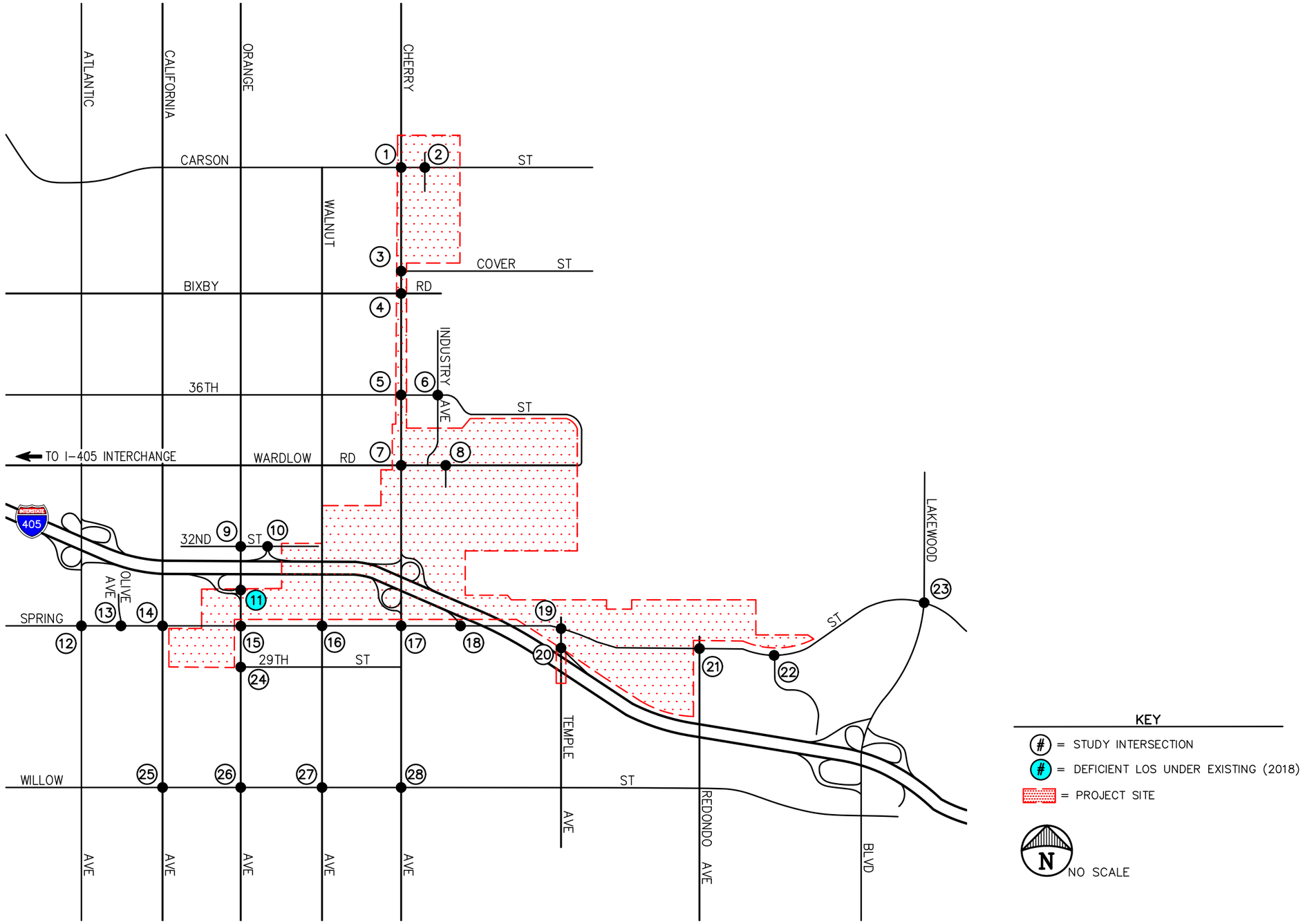

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-16

Existing (2018) Deficient LOS Summary

Globemaster Corridor Specific Plan Draft PEIR/PEIS

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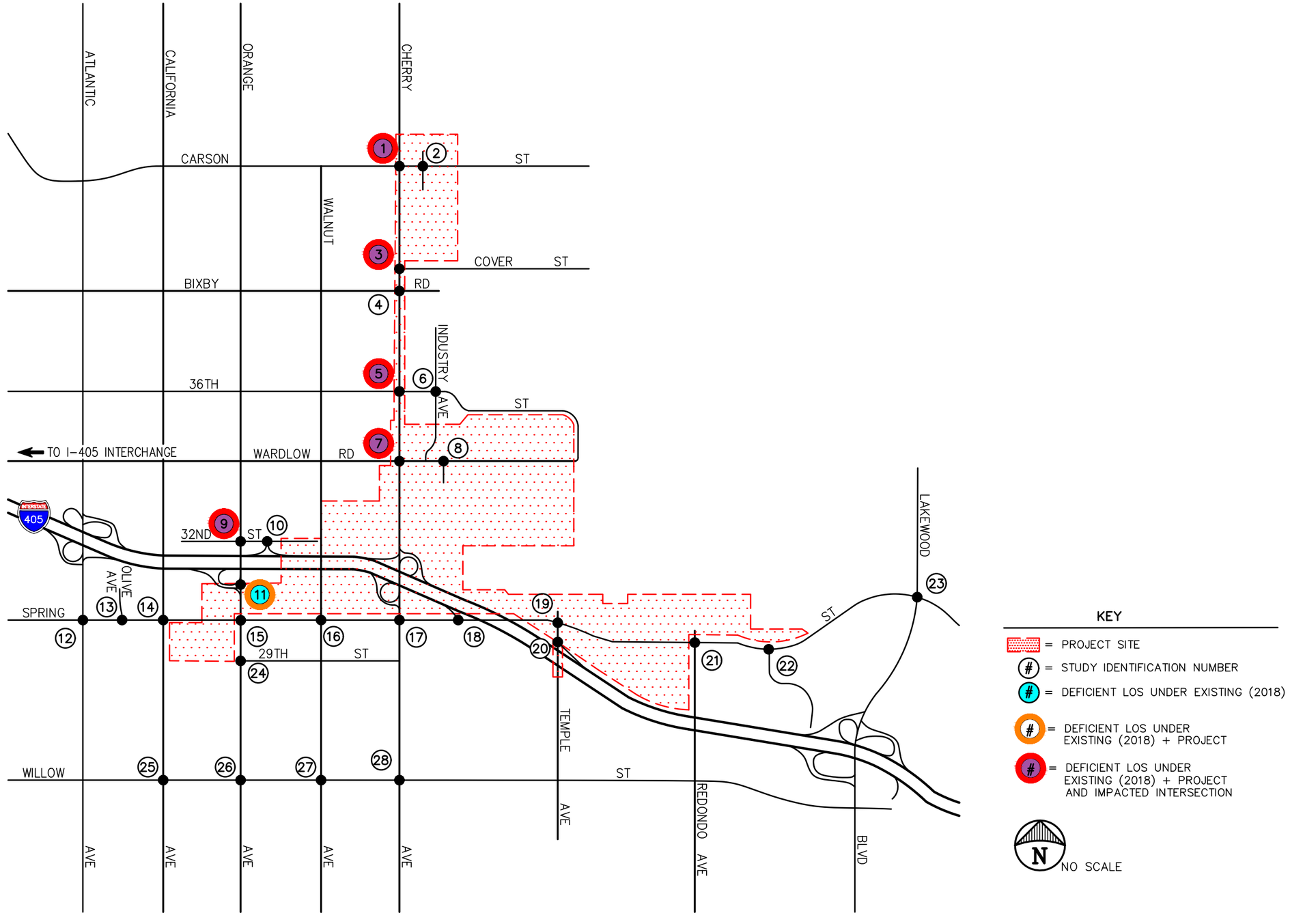

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-17

Existing (2018) + Project Deficient LOS Summary

Globemaster Corridor Specific Plan Draft PEIR/PEIS

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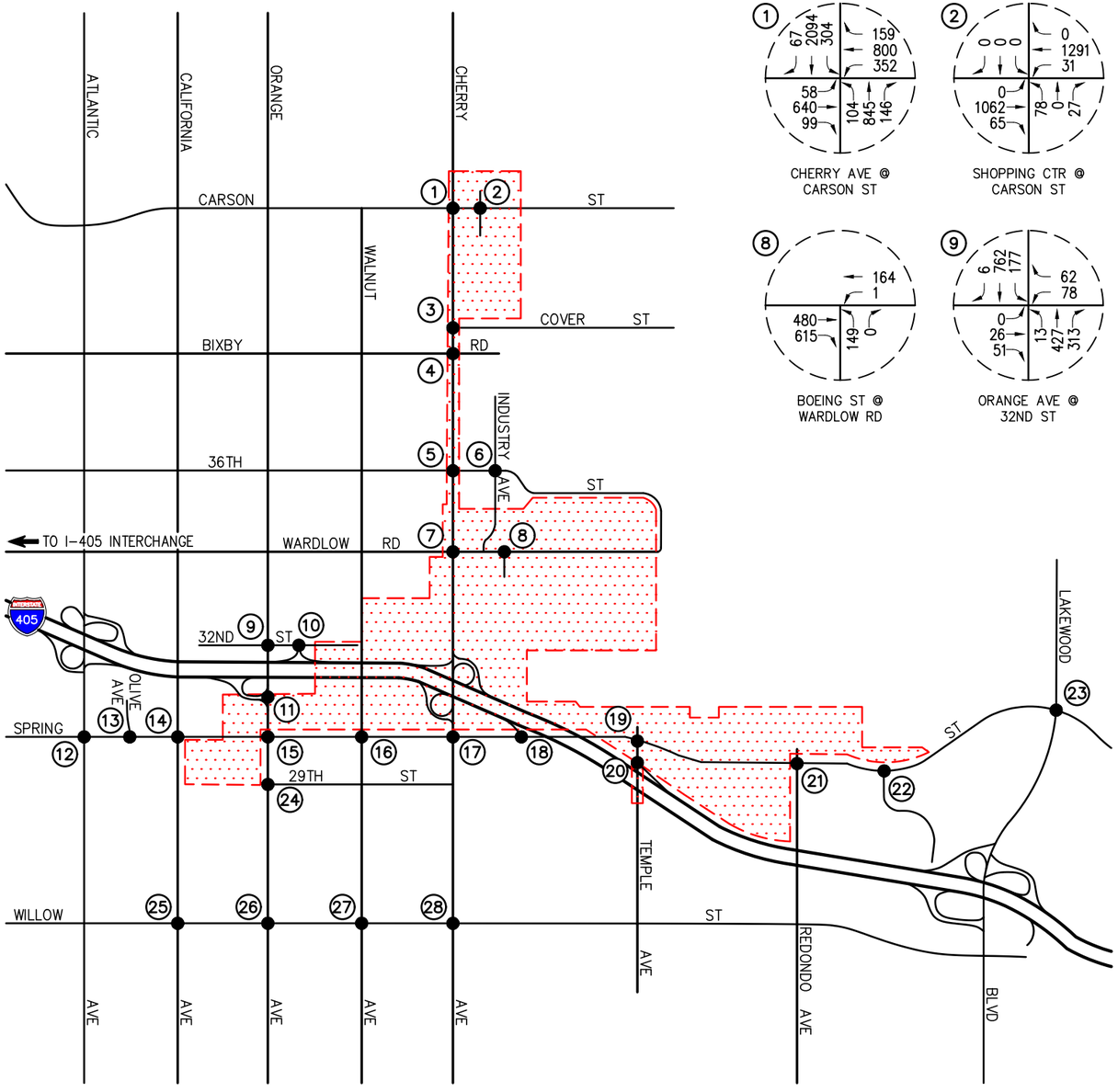

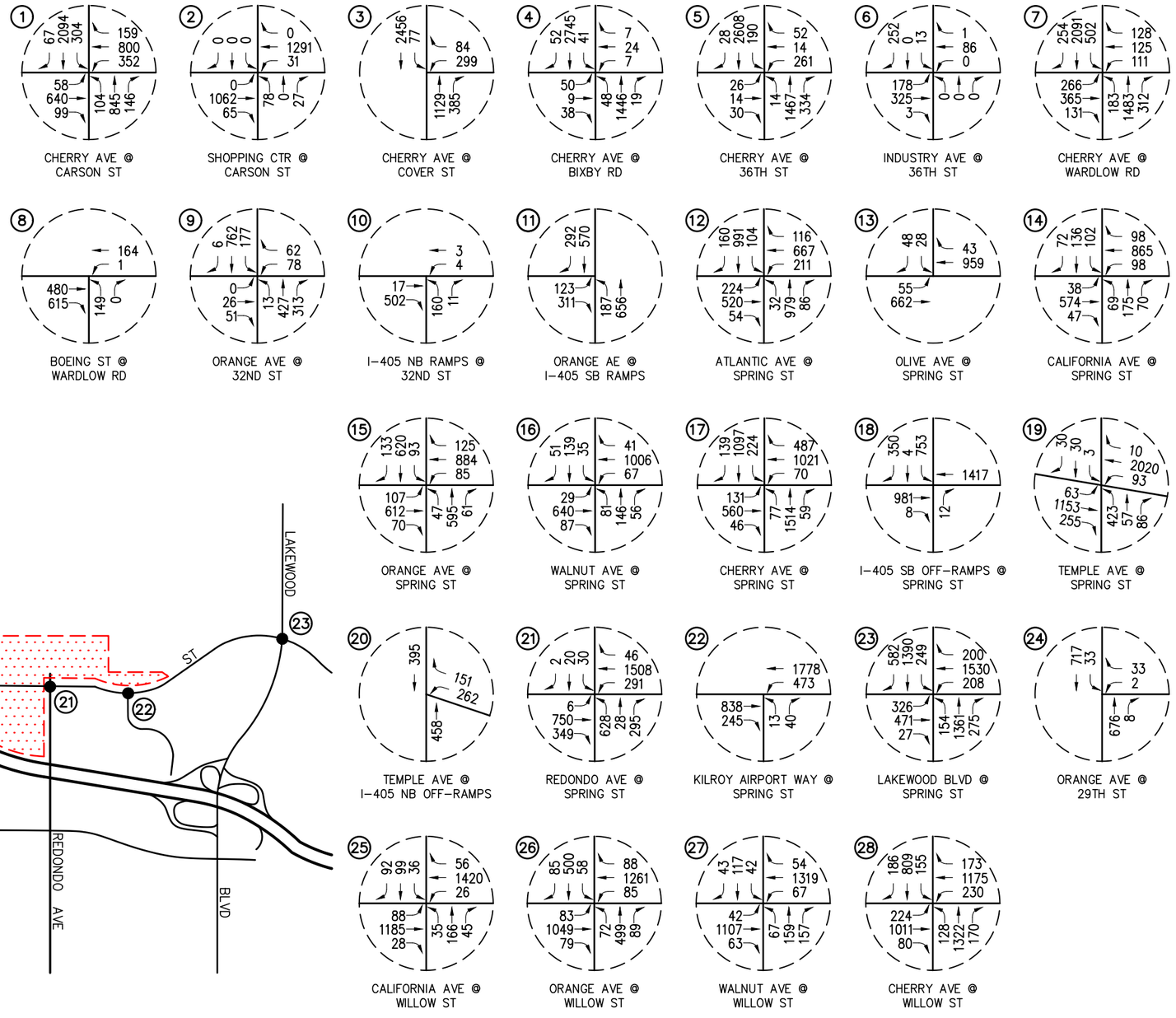

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(#) = STUDY INTERSECTION

= PROJECT SITE

N NO SCALE

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-18

Year 2040 Plus Project AM Peak Hour Traffic Volumes

Globemaster Corridor Specific Plan Draft PEIR/PEIS

DUDEK

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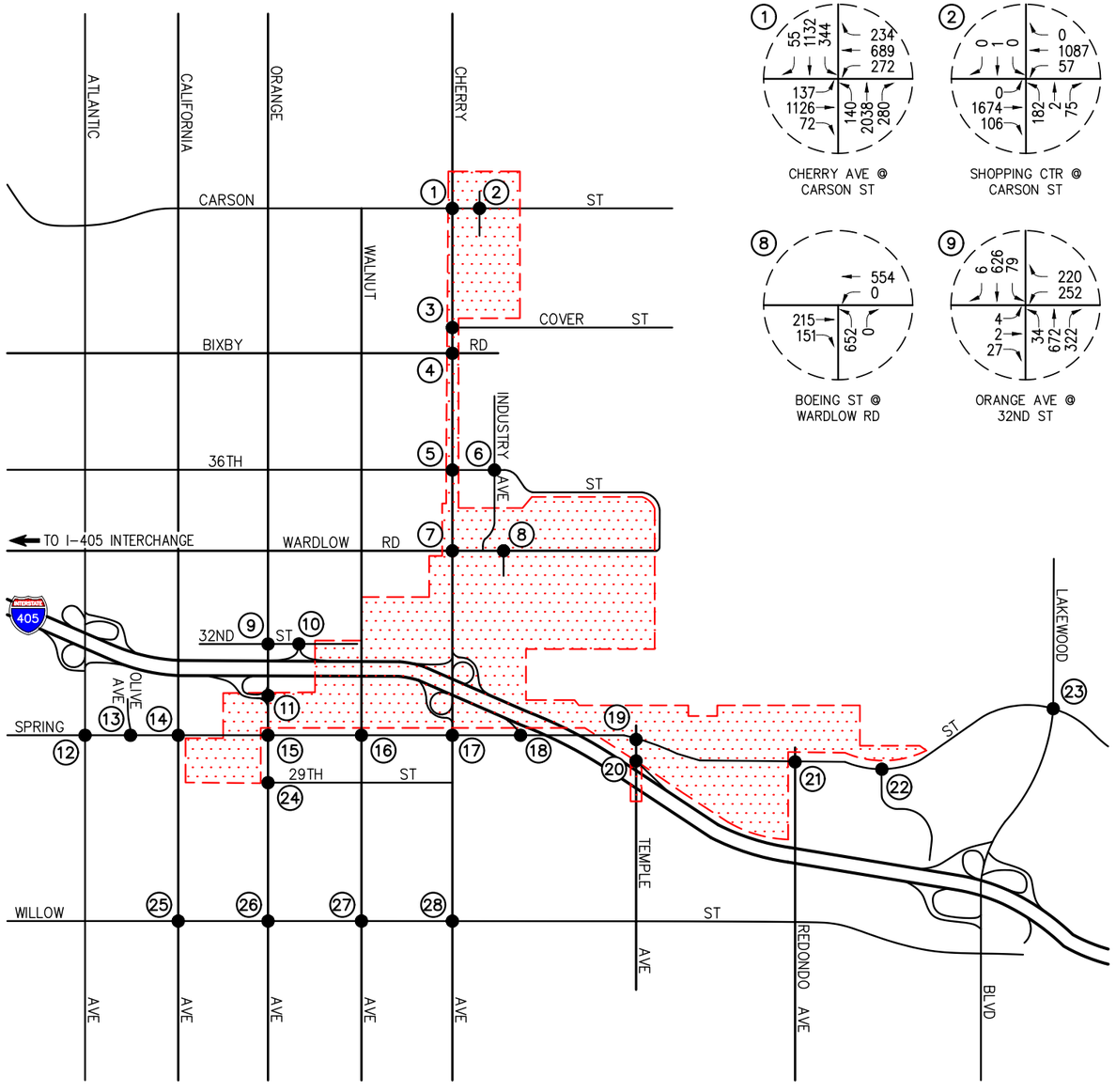

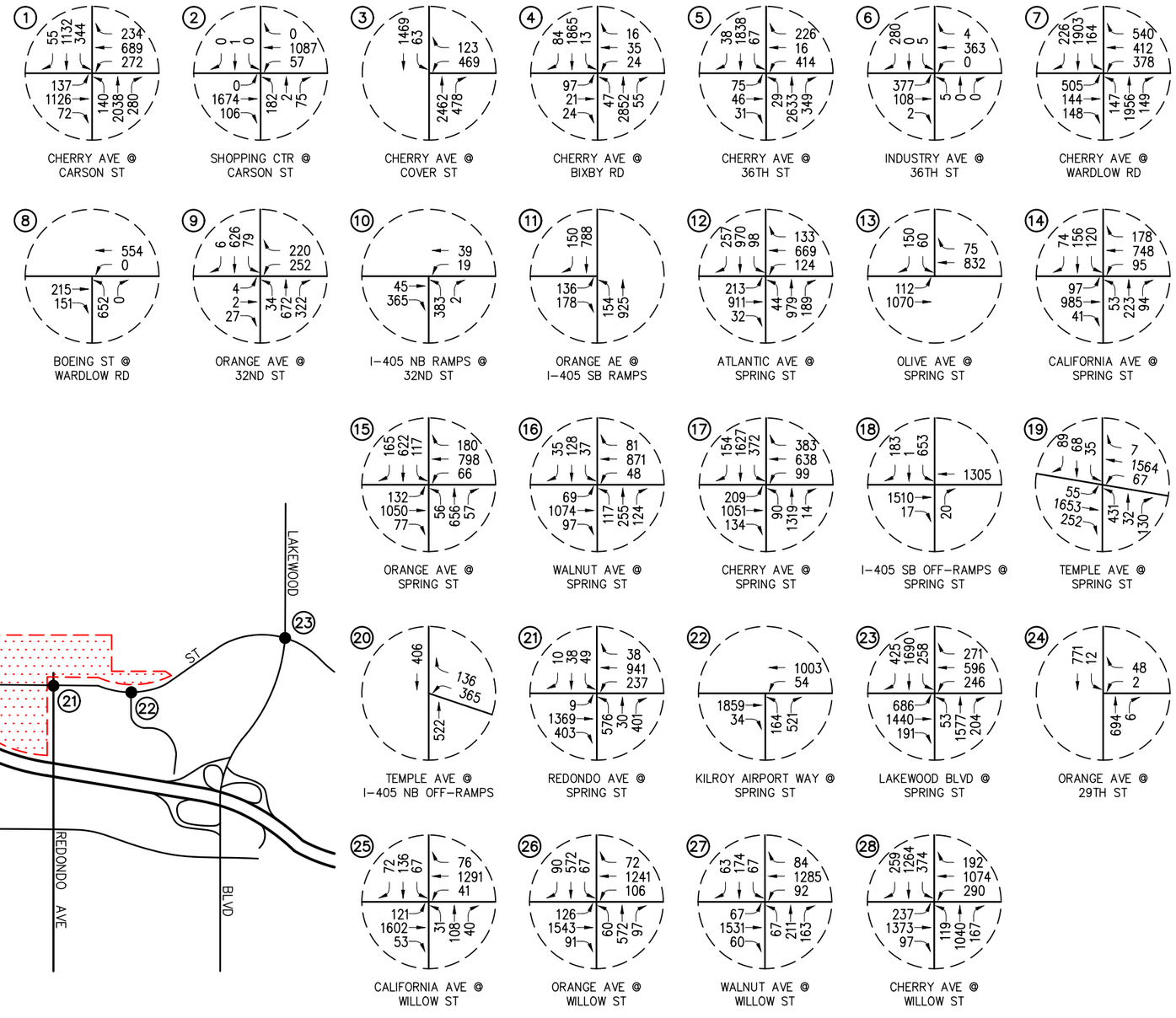

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-19

Year 2040 Baseline Plus Project PM Peak Hour Traffic Volumes.

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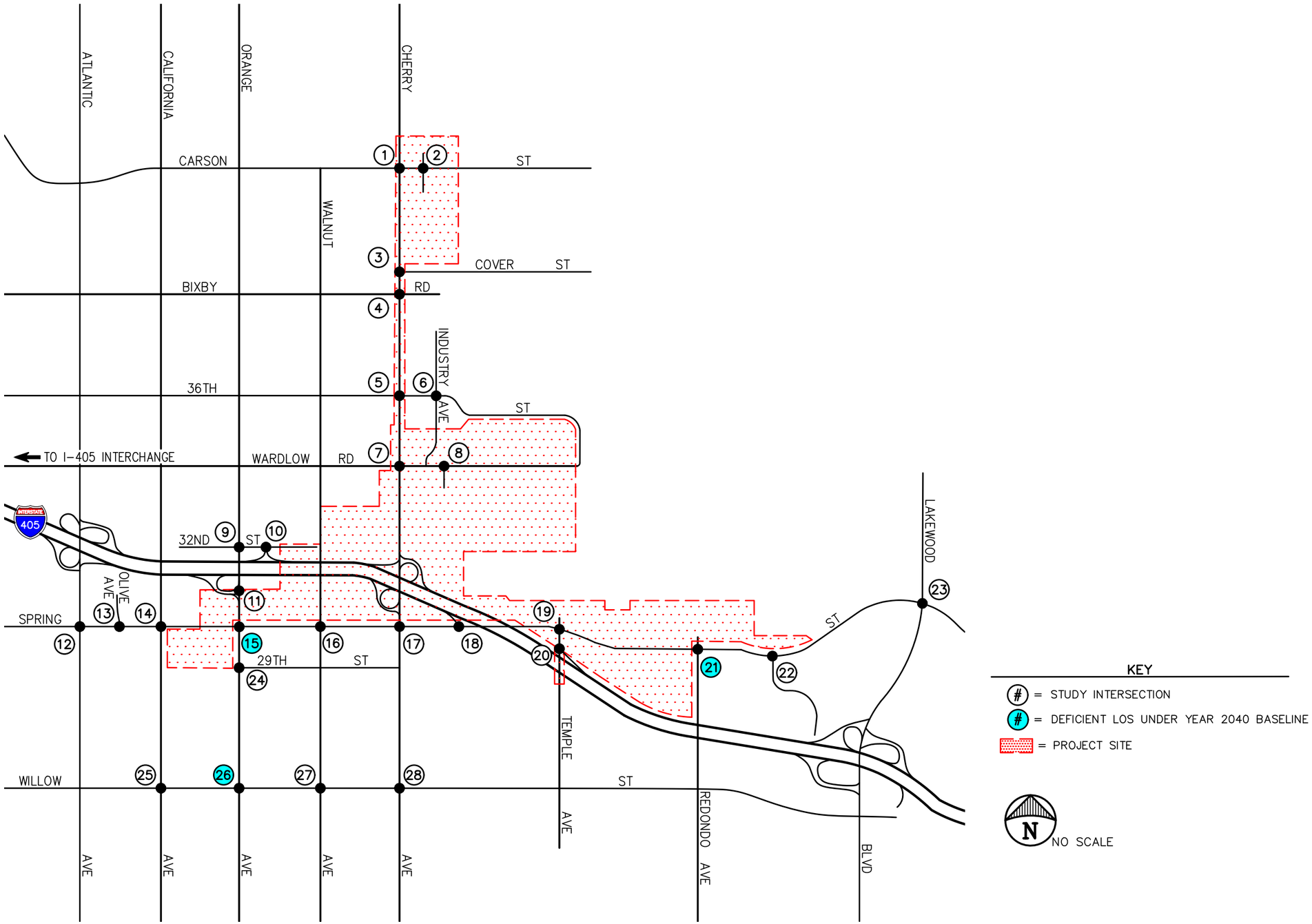

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-20

Year 2040 Deficient LOS Summary

Globemaster Corridor Specific Plan Draft PEIR/PEIS

DUDEK

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SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-21

Year 2040 + Project Deficient LOS Summary

Globemaster Corridor Specific Plan Draft PEIR/PEIS

DUDEK

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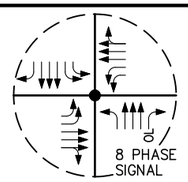
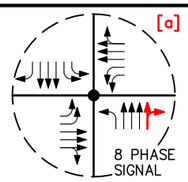
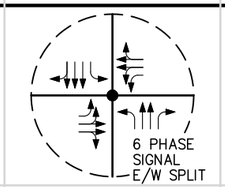
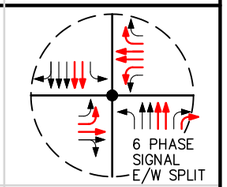
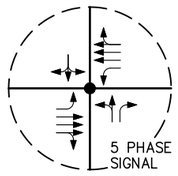
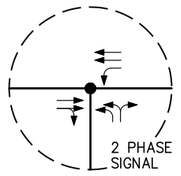
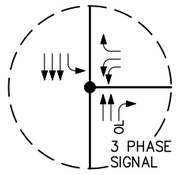
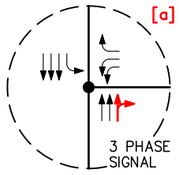
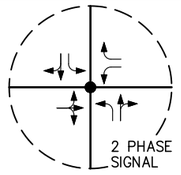
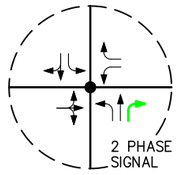
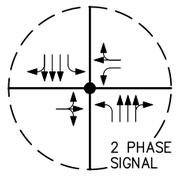
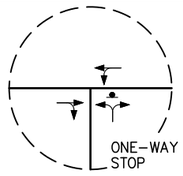
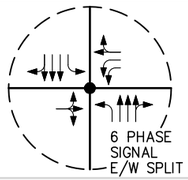
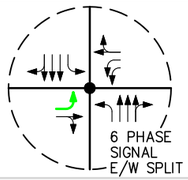
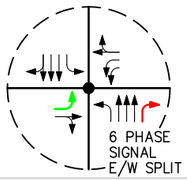
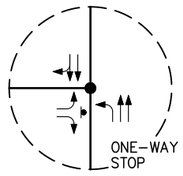
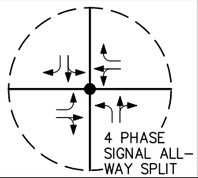
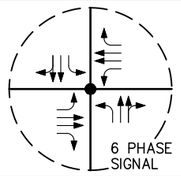
INTERSECTION	EXISTING	POTENTIAL MITIGATION WITHOUT ROW ACQUISITION	POTENTIAL MITIGATION WITH ROW ACQUISITION	INTERSECTION	EXISTING	POTENTIAL MITIGATION WITHOUT ROW ACQUISITION	POTENTIAL MITIGATION WITH ROW ACQUISITION
① CHERRY AVE @ CARSON ST		N/A		⑦ CHERRY AVE @ WARDLOW RD		N/A	
② SHOPPING CTR @ CARSON ST		N/A	N/A	⑧ BOEING ST @ WARDLOW RD		N/A	N/A
③ CHERRY AVE @ COVER ST		N/A		⑨ ORANGE AVE @ 32ND ST			N/A
④ CHERRY AVE @ BIXBY RD		N/A	N/A	⑩ I-405 NB RAMPS @ 32ND ST		N/A	N/A
⑤ CHERRY AVE @ 36TH ST				⑪ ORANGE AVE @ I-405 SB RAMPS		N/A	N/A
⑥ INDUSTRY AVE @ 36TH ST		N/A	N/A	⑫ ATLANTIC AVE @ SPRING ST		N/A	N/A

KEY

= APPROACH LANE ASSIGNMENT
= POTENTIAL MITIGATION WITHOUT R.O.W. ACQUISITION
= POTENTIAL MITIGATION WITH R.O.W. ACQUISITION NEEDED
● = TRAFFIC SIGNAL, F = FREE RIGHT, OL = OVERLAP
[a] = POTENTIAL MITIGATION REQUIRES ELIMINATION OF EXISTING NORTHBOUND RIGHT-TURN OVERLAP PHASE

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-22A

Existing (2018) + Project Potential Mitigation Measures (Intersections 1-12)

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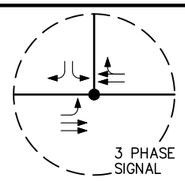
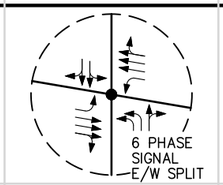
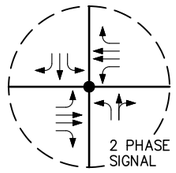
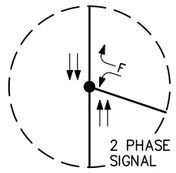
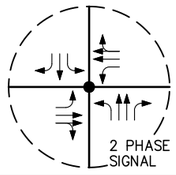
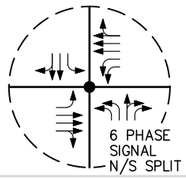
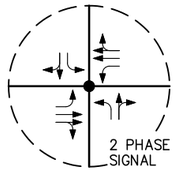
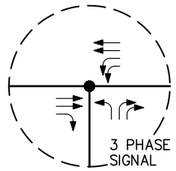
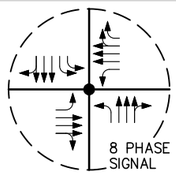
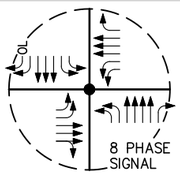
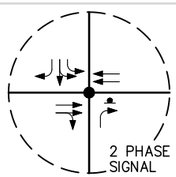
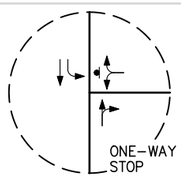
INTERSECTION	EXISTING	POTENTIAL MITIGATION WITHOUT ROW ACQUISITION	POTENTIAL MITIGATION WITH ROW ACQUISITION	INTERSECTION	EXISTING	POTENTIAL MITIGATION WITHOUT ROW ACQUISITION	POTENTIAL MITIGATION WITH ROW ACQUISITION
⑬ OLIVE AVE @ SPRING ST		N/A	N/A	⑲ TEMPLE AVE @ SPRING ST		N/A	N/A
⑭ CALIFORNIA AVE @ SPRING ST		N/A	N/A	⑳ TEMPLE AVE @ I-405 NB OFF-RAMPS		N/A	N/A
⑮ ORANGE AVE @ SPRING ST		N/A	N/A	㉑ REDONDO AVE @ SPRING ST		N/A	N/A
⑯ WALNUT AVE @ SPRING ST		N/A	N/A	㉒ KILROY AIRPORT WAY @ SPRING ST		N/A	N/A
⑰ CHERRY AVE @ SPRING ST		N/A	N/A	㉓ LAKEWOOD BLVD @ SPRING ST		N/A	N/A
⑱ I-405 SB OFF-RAMPS @ SPRING ST		N/A	N/A	㉔ ORANGE AVE @ 29TH ST		N/A	N/A

KEY

= APPROACH LANE ASSIGNMENT
= POTENTIAL MITIGATION WITHOUT R.O.W. ACQUISITION
= POTENTIAL MITIGATION WITH R.O.W. ACQUISITION NEEDED
● = TRAFFIC SIGNAL, F = FREE RIGHT, OL = OVERLAP

N
NO SCALE

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-22B

Existing (2018) + Project Potential Mitigation Measures (Intersections 13-24)

Globemaster Corridor Specific Plan Draft PEIR/PEIS

DUDEK

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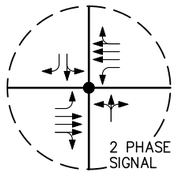
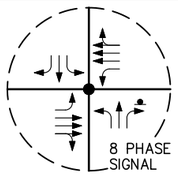
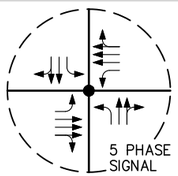
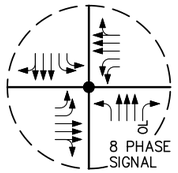
INTERSECTION	EXISTING	POTENTIAL MITIGATION WITHOUT ROW ACQUISITION	POTENTIAL MITIGATION WITH ROW ACQUISITION	INTERSECTION	EXISTING	POTENTIAL MITIGATION WITHOUT ROW ACQUISITION	POTENTIAL MITIGATION WITH ROW ACQUISITION
(25) CALIFORNIA AVE @ WILLOW ST		N/A	N/A				
(26) ORANGE AVE @ WILLOW ST		N/A	N/A				
(27) WALNUT AVE @ WILLOW ST		N/A	N/A				
(28) CHERRY AVE @ WILLOW ST		N/A	N/A				

KEY

- = APPROACH LANE ASSIGNMENT
- = POTENTIAL MITIGATION WITHOUT R.O.W. ACQUISITION
- = POTENTIAL MITIGATION WITH R.O.W. ACQUISITION NEEDED
- ● = TRAFFIC SIGNAL, F = FREE RIGHT, OL = OVERLAP

N NO SCALE

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-22C

Existing (2018) + Project Potential Mitigation Measures (Intersections 25-28)

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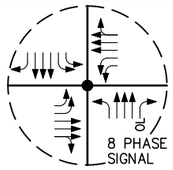
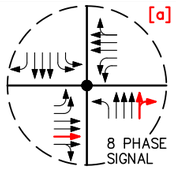
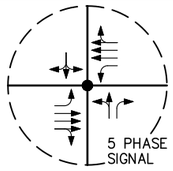
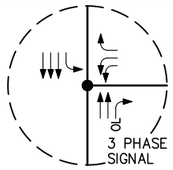
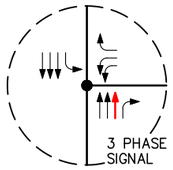
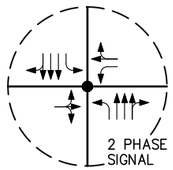
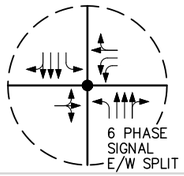
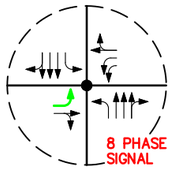
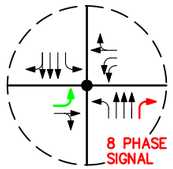
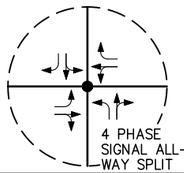
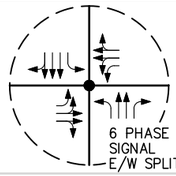
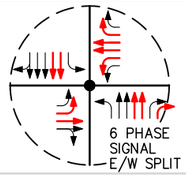
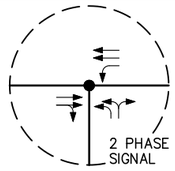
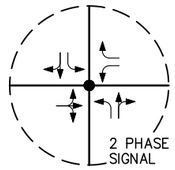
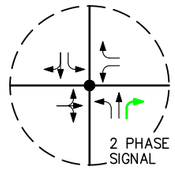
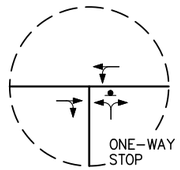
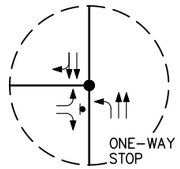
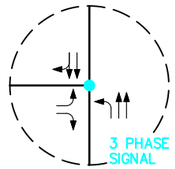
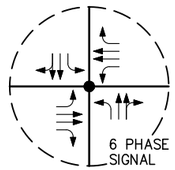
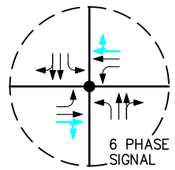
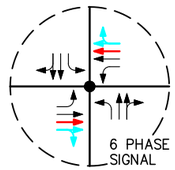
INTERSECTION	EXISTING	YEAR 2040 PLANNED IMPROVEMENTS	POTENTIAL MITIGATION WITHOUT ROW ACQUISITION	POTENTIAL MITIGATION WITH ROW ACQUISITION
① CHERRY AVE @ CARSON ST		N/A	N/A	
② SHOPPING CTR @ CARSON ST		N/A	N/A	N/A
③ CHERRY AVE @ COVER ST		N/A	N/A	
④ CHERRY AVE @ BIXBY RD		N/A	N/A	N/A
⑤ CHERRY AVE @ 36TH ST		N/A		
⑥ INDUSTRY AVE @ 36TH ST		N/A	N/A	N/A

INTERSECTION	EXISTING	YEAR 2040 PLANNED IMPROVEMENTS	POTENTIAL MITIGATION WITHOUT ROW ACQUISITION	POTENTIAL MITIGATION WITH ROW ACQUISITION
⑦ CHERRY AVE @ WARDLOW RD		N/A	N/A	
⑧ BOEING ST @ WARDLOW RD		N/A	N/A	N/A
⑨ ORANGE AVE @ 32ND ST		N/A		N/A
⑩ I-405 NB RAMPS @ 32ND ST		N/A	N/A	N/A
⑪ ORANGE AVE @ I-405 SB RAMPS			N/A	N/A
⑫ ATLANTIC AVE @ SPRING ST			N/A	

KEY

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- = POTENTIAL MITIGATION WITHOUT R.O.W. ACQUISITION
- = POTENTIAL MITIGATION WITH R.O.W. ACQUISITION NEEDED
- ● = TRAFFIC SIGNAL, F = FREE RIGHT, OL = OVERLAP
- [a] = POTENTIAL MITIGATION REQUIRES ELIMINATION OF EXISTING NORTHBOUND RIGHT-TURN OVERLAP PHASE

NO SCALE

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-23A

Year 2040 + Project Potential Mitigation Measures (Intersections 1-12)

Globemaster Corridor Specific Plan Draft PEIR/PEIS

DUDEK

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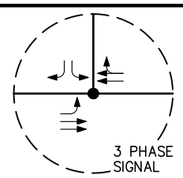
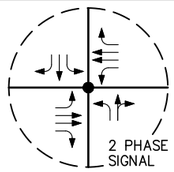
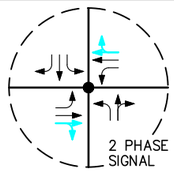
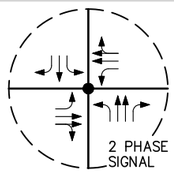
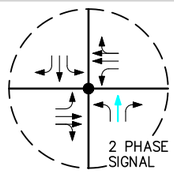
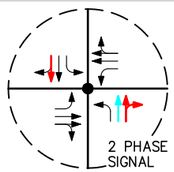
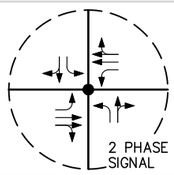
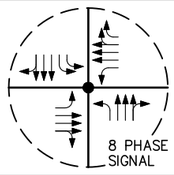
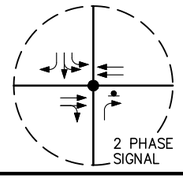
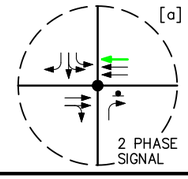
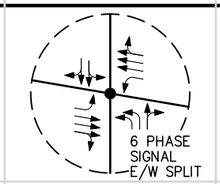
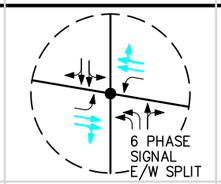
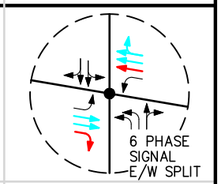
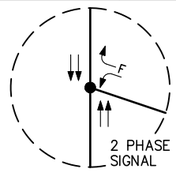
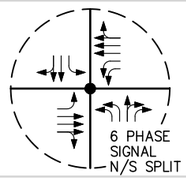
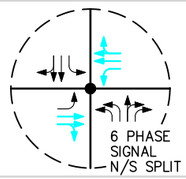
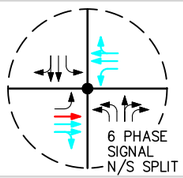
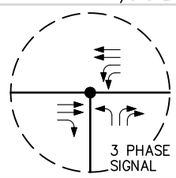
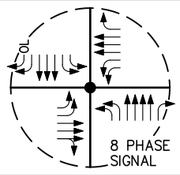
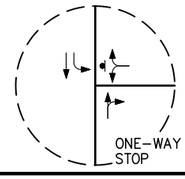
INTERSECTION	EXISTING	YEAR 2040 PLANNED IMPROVEMENTS	POTENTIAL MITIGATION WITHOUT ROW ACQUISITION	POTENTIAL MITIGATION WITH ROW ACQUISITION
⑬ OLIVE AVE @ SPRING ST		N/A	N/A	N/A
⑭ CALIFORNIA AVE @ SPRING ST			N/A	N/A
⑮ ORANGE AVE @ SPRING ST			N/A	
⑯ WALNUT AVE @ SPRING ST		N/A	N/A	N/A
⑰ CHERRY AVE @ SPRING ST		N/A	N/A	N/A
⑱ I-405 SB OFF-RAMPS @ SPRING ST		N/A		N/A

INTERSECTION	EXISTING	YEAR 2040 PLANNED IMPROVEMENTS	POTENTIAL MITIGATION WITHOUT ROW ACQUISITION	POTENTIAL MITIGATION WITH ROW ACQUISITION
⑲ TEMPLE AVE @ SPRING ST			N/A	
⑳ TEMPLE AVE @ I-405 NB OFF-RAMPS		N/A	N/A	N/A
㉑ REDONDO AVE @ SPRING ST			N/A	
㉒ KILROY AIRPORT WAY @ SPRING ST		N/A	N/A	N/A
㉓ LAKEWOOD BLVD @ SPRING ST		N/A	N/A	N/A
㉔ ORANGE AVE @ 29TH ST		N/A	N/A	N/A

NO SCALE

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- = POTENTIAL MITIGATION WITHOUT R.O.W. ACQUISITION
- = POTENTIAL MITIGATION WITH R.O.W. ACQUISITION NEEDED
- ● = TRAFFIC SIGNAL, F = FREE RIGHT, OL = OVERLAP
- [a] = IMPACTED UNDER CALTRANS METHODOLOGY ONLY

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-23B

Year 2040 + Project Potential Mitigation Measures (Intersections 13-24)

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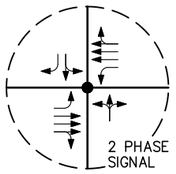
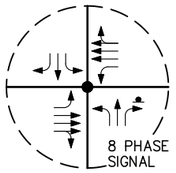
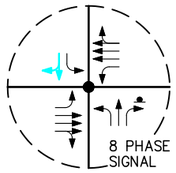
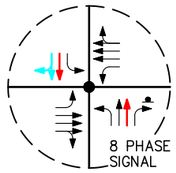
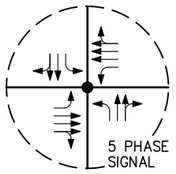
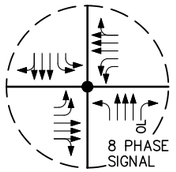
INTERSECTION	EXISTING	YEAR 2040 PLANNED IMPROVEMENTS	POTENTIAL MITIGATION WITHOUT ROW ACQUISITION	POTENTIAL MITIGATION WITH ROW ACQUISITION	INTERSECTION	EXISTING	YEAR 2040 PLANNED IMPROVEMENTS	POTENTIAL MITIGATION WITHOUT ROW ACQUISITION	POTENTIAL MITIGATION WITH ROW ACQUISITION
㉕ CALIFORNIA AVE @ WILLOW ST		N/A	N/A	N/A					
㉖ ORANGE AVE @ WILLOW ST			N/A						
㉗ WALNUT AVE @ WILLOW ST		N/A	N/A	N/A					
㉘ CHERRY AVE @ WILLOW ST		N/A	N/A	N/A					

KEY

- = APPROACH LANE ASSIGNMENT
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- = POTENTIAL MITIGATION WITHOUT R.O.W. ACQUISITION
- = POTENTIAL MITIGATION WITH R.O.W. ACQUISITION NEEDED
- ● = TRAFFIC SIGNAL, F = FREE RIGHT, OL = OVERLAP

N NO SCALE

SOURCE: Lindscott Law & Greenspan Engineers, 2020

FIGURE 3.11-23C

Year 2040 + Project Potential Mitigation Measures (Intersections 25-28)

Globemaster Corridor Specific Plan Draft PEIR/PEIS

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3.12 TRIBAL CULTURAL RESOURCES

This section describes the existing tribal cultural resources (TCRs) setting of the proposed Globemaster Corridor Specific Plan (GCSP; Proposed Project), identifies associated regulatory requirements, and analyzes the potential impacts related to implementation of the Proposed Project. The following discussion focuses on the existing TCRs in the City of Long Beach (City) and more specifically, the Plan Area.

The Initial Study (IS) and Notice of Preparation (NOP) are contained in Appendix A-1, Initial Study; and Appendix A-2, Notice of Preparation, respectively. Comments regarding TCRs, received in response to the NOP (see Appendix A-3, Notice of Preparation Comment Letters) include a letter from the Native American Heritage Commission (NAHC) describing tribal consultation requirements and listing recommendations for cultural resources assessments. Recommendations included conducting a search of the California Historical Research Information System (CHRIS); conducting a field survey (if determined necessary based on the CHRIS records search results); preparing a professional report detailing the findings of the field survey and records search; conducting a Sacred Lands File (SLF) search; consulting with California Native American tribes in compliance with Assembly Bill (AB) 52 and Senate Bill (SB) 18; and including provisions for the inadvertent discovery of cultural resources during construction and the protection of such resources. As demonstrated in this section, a cultural resources assessment has been conducted for the Proposed Project, and this assessment adheres to these recommendations, as appropriate.

The IS found that the Proposed Project could have a potentially significant impact to TCRs (Appendix A-1). As such, all impacts are fully addressed in this Draft Program Environmental Impact Report (PEIR)/Draft Program Environmental Impact Statement (PEIS).

3.12.1 Existing Conditions

The Plan Area and immediate vicinity is characterized as an urban, developed commercial, industrial, and residential area. The Long Beach Airport borders the Plan Area on the north, east, and south. The Plan Area and some of the surrounding properties have undergone disturbance from previous development. The Plan Area consists of low- to mid-rise commercial and industrial uses.

CHRIS Record Search

Dudek conducted a California Historical Resources Information System (CHRIS) records search at the South Central Coastal Information Center (SCCIC) on September 5, 2018 for the Plan Area, as well as for an expanded 0.5-mile radius study area. This search included a collection of mapped prehistoric, historical, and built-environment resources; Department of Parks and Recreation (DPR) site records; technical reports; and archival resources. Additional consulted sources included historical maps of the Plan Area, the National Register of Historic Places

(NRHP), the California Register of Historical Resources (CRHR), the California Historic Property Data File, and the lists of California State Historical Landmarks, California Points of Historical Interest, and the Archaeological Determinations of Eligibility.

Previously Conducted Cultural Resource Studies

The SCCIC records indicate that 25 previous cultural resources technical investigations have been conducted within 0.5-mile of the Plan Area between 1976 and 2014. Of these 25 investigations, seven overlap the Plan Area (Table 3.12-1). Approximately 50 percent of the Plan Area has been previously investigated.

Table 3.12-1
Previously Conducted Technical Studies Within 0.5-Mile of the Plan Area

Report Number LA-	Author	Year	Report Title
*01672	Galvin, Kathleen F.	1987	Spring Street-Long Beach Boulevard to Cherry Avenue Archaeological/Historical Survey
02887	Demcak, Carol R.	1993	Cultural Resource Assessment for Proposed Project for Lakewood Boulevard (rte. 19) in the City of Long Beach, California
*03651	Cottrell, Marie G.	1976	Record Search for Area No. 1 in the City of Signal Hill
04354	Anonymous	1977	Historic Property Survey for the Proposed Heartwell Park Bike Route
*04632	Duke, Curt	1999	Cultural Resource Assessment for Pacific Bell Mobile Services Facility La 621-01, County of Los Angeles, California
04750	Duke, Curt	1999	Cultural Resource Assessment for the AT&T Wireless Services Facility Number C574, County of Los Angeles, California
05121	Duke, Curt	2000	Cultural Resource Assessment for Pacific Bell Mobile Services Facility LA 629-03, County of Los Angeles, Ca
05215	McKenna, Jeanette A.	2001	A Cultural Resources Investigation of the Proposed Long Beach Ocean Desalination Project, Long Beach, Los Angeles County, California
05405	McKenna, Jeanette A.	2000	A Phase I Cultural Resource Investigation of the City of Signal Hill Home Depot Commercial Center Plan Area, Signal Hill, Los Angeles County, California
05406	Maki, Mary K.	2001	Negative Phase I Archaeological Survey of 5.6 Acres for the Las Brias Neighborhood Redevelopment Project City of Signal Hill, Los Angeles County, Ca
05879	Duke, Curt	2002	Cultural Resource Assessment AT&T Wireless Services Facility No. 05087a-01 Los Angeles County, California
06176	Unknown	2001	Nextel Communications CA-7809a/Kessler 3770 Cherry Avenue Lakewood, California
*06827	Strudwick, Ivan H.	1999	Results of the Cultural Resources Records Search and Survey for the Long Beach Sports Park Project Located Near Signal Hill in the City of Long Beach, Los Angeles County, California
07181	Maki, Mary K.	2005	CDC – Las Brisas II Housing Development

Table 3.12-1
Previously Conducted Technical Studies Within 0.5-Mile of the Plan Area

Report Number LA-	Author	Year	Report Title
08434	Bonner, Wayne H.	2004	Cultural Resource Records Search Results and Site Visit for Nextek Communications Site Candidate Ca7747-c (new Dolphin), 2875 Junipero Avenue, Signal Hill, Los Angeles County, California
08477	Billat, Lorna	2005	Orange 405/CA-7745b, Cellular Antenna Installation on an Historic Property, 3401 Orange Avenue, Long Beach, Ca
08898	Baker, Cindy and Mary L. Maniery	2007	Cultural Resource Inventory and Evaluation of United States Army Reserve 63d Regional Readiness Command Facilities
09145	Bonner, Wayne H.	2007	Direct APE Historic Architectural Assessment for Royal Street Communications, LLC Candidate LA2892C (SCE Hinson Harbor), 2377 West Willow Street, Long Beach, Los Angeles County, California
09568	Wlodarski, Robert J.	2009	Proposed Bechtel Wireless Telecommunications Site LA0115 (Hartley Medical Building), 2888 Long Beach Blvd, Long Beach, California 90806
09574	Bonner, Wanye H., Sarah A. Williams, and Kathleen A. Crawford	2009	Cultural Resources Records Search and Site Visit Results for T-Mobile USA Candidate LA33750A (Golf Center) 2550 Orange Avenue, Signal Hill, Los Angeles County, CA
09695	Onken, Jill, Ellen Chapman, William Hayden, Ken Becker, Christopher Doolittle, and Jeffrey H. Altschul	2006	Archaeological Testing in Support of the Douglas Park Project, Long Beach, California; Statistical Research, Inc. Technical Report 06-71
*10771	Feldman, Jessica B.	2005	Historical Assessment and Impacts Discussion for the Proposed Terminal Improvements, Long Beach Airport
*11429	McKenna, Jeanette A.	2011	Archaeological/Cultural Resources Records Search, City of Lakewood Overview
*12056	Bonner, Wayne	2012	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate LA02621A (Extra Space Storage), 2101 East Carson Street, Long Beach, Los Angeles County, California
13153	Brunzell, David	2014	Cultural Resources Assessment of the Long Beach Airport Project, Long Beach, Los Angeles County, California (BCR Consulting Project No. TRF1412)

* Studies that overlap the Plan Area.

Previously Recorded Cultural Resources

The SCCIC records indicate that eight resources have been previously recorded within a 0.5-mile radius of the Plan Area (Table 3.12-2, SCCIC Results: Previously Recorded Cultural Resources Within 0.5-Mile of the Plan Area). Of these resources, six are built-environment resources, two of which are located within the Plan Area. The other two resources, P-19-000838/CA-LAN-838 and P-19-000839/CA-LAN-839, are prehistoric sites comprised of shell midden deposits that were recorded in 1971, 1973, and 1987; however, these prehistoric sites were identified outside the Plan Area. Two of the built environment resources, including the Lomita Gasoline Company Building

(P-19-187112) and the Lomita Gas Company/Petrolane Compressor House (P-19-187156), have been determined eligible for listing on the CRHR and one built environment resource, the Long Beach USAR Center (P-19-187956) appears eligible for the NRHP. The Lomita Gas Company/Petrolane Compressor House is located within the Plan Area.

Table 3.12-2
SCCIC Results: Previously Recorded Cultural Resources Within 0.5-Mile of the Plan Area

Primary Number P-19-	Trinomial CA-LAN-	Description	Recorded By/Year	Eligibility Status
000838	838	Small shell midden that was identified on the western side of Signal Hill and was destroyed in March of 1976	Fenenga, G. (1971; Updated 1973)	-
000839	839	Shell midden eroding out of covering of crude asphaltum that was identified within sandy-covered tar amongst oil wells	Fenenga, G. (1971); Galvin (Updated 1987)	-
187112	-	Lomita Gasoline Company/Petrolane Office Building at 2901 Orange Avenue; HRI #066945	Woodward, Lucinda (Evaluator) (1989)	2S2: Eligible for NRHP through Section 106; Listed in CRHR
*187156	-	Lomita Gas Company/Petrolane Compressor House; HRI #066945	Gualtieri, Kathryn (State Historic Preservation Officer) (1989)	2S2: Eligible for NRHP through Section 106; Listed in CRHR
187639	-	One-story commercial building located at 3401 Orange Avenue that was constructed in 1934 in the Art Deco Style of architecture. Additions and modifications to this building occurred between 1936 and 2004; HRI #155875	Brady, Jon L. (2005)	Ineligible
187956	-	Schroeder Hall USAR Center (historic name) or Long Beach USAR Center, Facility No. CA022 is a Contemporary style building constructed in 1960 by the Directorate of Facility Engineers, For MacArthur on behalf of the U.S. Army Reserve (USAR) as a training and administrative facility	PAR Environmental Services, Inc. (2006)	3S: Appears eligible for NRHP as individual property
188438	-	Orange-Carson Plaza consists of a one-story, masonry strip-mall or suburban plaza style plaza consisting of five buildings that was developed from 1955 through 1987.	Supernowicz, Dana (2009)	6Y2: Ineligible for NRHP through Section 106
*190082	-	Storage USA Building is a commercial building that is two- and three-stories high in Modern Style architecture that was constructed in 1956 and altered in 1985-1987 and in 2004	Crawford, K.A. (2012)	6Z: Found ineligible for NR, CR or Local designation through survey evaluation.

* Resources that occur within the Plan Area.

Native American Coordination

NAHC Sacred Lands File Search

Dudek contacted the NAHC on November 18, 2018, to request a search of the SLF for the Proposed Project. The NAHC responded via email on January 3, 2019, indicating that the search did not identify any Native American resources near the Plan Area. Because the SLF search does not include an exhaustive list of Native American cultural resources, the NAHC suggested contacting Native American individuals and/or tribal organizations who may have direct knowledge of cultural resources in or near the Plan Area. The City received one request for consultation from the Gabrieleno Band of Mission Indians – Kizh Nation. The city completed consultation with the tribe on July 8, 2020.

Assembly Bill 52

A project with an effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment (PRC Section 21084.2). Under AB 52, a TCR must have tangible, geographically defined properties that can be impacted by project implementation. The Proposed Project is subject to compliance with AB 52.

The City sent notification of the Proposed Project to all California Native American tribal representatives that have requested project notifications from the City pursuant to AB 52 and that are on file with the NAHC as being traditionally or culturally affiliated with the geographic area on September 6, 2018. These notification letters included a project map and description inquiring if the tribe would like to consult to discuss the project and the potential to impact any TCRs. AB 52 allows tribes 30 days after receiving notification to request consultation. If a response is not received within the allotted 30 days, it is assumed that consultation is declined. To date, government-to-government consultation initiated by the City has not resulted in the identification of a TCR within or near the Plan Area. Table 3.12-3, Assembly Bill 52 Native American Tribal Outreach Results, summarizes the results of the AB 52 process for the Proposed Project. The confidential AB 52 consultation results are on file with the City.

Table 3.12-3
Assembly Bill 52 Native American Tribal Outreach Results

Native American Tribal Representatives	Method of Notification	Response to City Notification Letters
Andrew Salas, Chairperson Gabrieleno Band of Mission Indians – Kizh Nation	Certified Mail; September 6, 2018	Request for Consultation; Consultation concluded July 8, 2020
Anthony Morales, Chairperson Gabrieleno/Tongva San Gabriel Band of Mission Indians	Certified Mail; September 6, 2018	No response

Table 3.12-3
Assembly Bill 52 Native American Tribal Outreach Results

Native American Tribal Representatives	Method of Notification	Response to City Notification Letters
Robert Dorame, Chairperson Gabrieleno Tongva Indians of California Tribal Council	Certified Mail; September 6, 2018	No response
Sandonne Goad, Chairperson Gabrielino/Tongva Nation	Certified Mail; September 6, 2018	No response
Charles Alvarez Gabrielino-Tongva Tribe	Certified Mail; September 6, 2018	No response

Senate Bill 18

According to SB 18, the City has a responsibility to initiate consultation with tribes/groups listed on the California Native American Heritage Commission's (NAHC's) official SB 18 contact list for amendment of a General Plan. SB 18 requires the City to send a letter to each contact on the NAHC's SB 18 list, extending an invitation for consultation. Tribes will have 90 days from receipt of the letter to request consultation. The City must also send a notice to all contacts 45 days prior to adopting the amended General Plan, as well as a third notice 10 days prior to any public hearing regarding the General Plan amendment.

The City sent notification of the Proposed Project to all California Native American tribal representatives that have requested Project notifications pursuant to SB 18 and that are on file with the NAHC as being traditionally or culturally affiliated with the geographic area on September 6, 2018. These notification letters included a Project map and description inquiring if the tribe would like to consult on the Proposed Project. To date, government-to-government consultation initiated by the City has not resulted in the identification of any cultural resources within or near the Plan Area. Table 3.12-4, Senate Bill 18 Native American Tribal Outreach Results, summarizes the results of the SB 18 process for the Proposed Project.

Table 3.12-4
Senate Bill 18 Native American Tribal Outreach Results

Native American Tribal Representatives	Method of Notification	Response to City Notification Letters
Andrew Salas, Chairperson Gabrieleno Band of Mission Indians – Kizh Nation	Certified Mail; September 6, 2018	Request for Consultation; Consultation concluded July 8, 2020
Anthony Morales, Chairperson Gabrieleno/Tongva San Gabriel Band of Mission Indians	Certified Mail; September 6, 2018	No response
Robert Dorame, Chairperson Gabrieleno Tongva Indians of California Tribal Council	Certified Mail; September 6, 2018	No response

Table 3.12-4
Senate Bill 18 Native American Tribal Outreach Results

Native American Tribal Representatives	Method of Notification	Response to City Notification Letters
Sandonne Goad, Chairperson Gabrielino/Tongva Nation	Certified Mail; September 6, 2018	No response
Charles Alvarez Gabrielino-Tongva Tribe	Certified Mail; September 6, 2018	No response

In summary, no cultural resources were identified within the Plan Area as a result of the CHRIS records search. One traditionally or culturally affiliated tribe requested consultation regarding potential impacts to TCRs.

3.12.2 Regulatory Setting

Federal

The National Register of Historic Places

The NHPA established the National Register of Historic Places (NRHP) and the President's Advisory Council on Historic Preservation (ACHP), and provided that states may establish State Historic Preservation Officers (SHPOs) to carry out some of the functions of the NHPA. Most significantly for federal agencies responsible for managing cultural resources, Section 106 of the NHPA directs that

> [t]he head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the NRHP.

Section 106 also affords the ACHP a reasonable opportunity to comment on the undertaking (16 U.S.C. 470f).

36 Code of Federal Regulations, Part 800 (36 CFR 800) implements Section 106 of the NHPA. It defines the steps necessary to identify historic properties (those cultural resources listed in or eligible for listing in the NRHP), including consultation with federally recognized Native American tribes to identify resources with important cultural values; to determine whether or not they may be adversely affected by a proposed undertaking; and the process for eliminating, reducing, or mitigating the adverse effects.

The content of 36 CFR 60.4 defines criteria for determining eligibility for listing in the NRHP. The significance of cultural resources identified during an inventory must be formally evaluated for historic significance in consultation with the ACHP and the California SHPO to determine if the resources are eligible for inclusion in the NRHP. Cultural resources may be considered eligible for listing if they possess integrity of location, design, setting, materials, workmanship, feeling, and association.

Regarding criteria A through D of Section 106, the quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, cultural resources, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that:

A. Are associated with events that have made a significant contribution to the broad patterns of our history; or

B. Are associated with the lives of persons significant in our past; or

C. Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. have yielded or may be likely to yield, information important in prehistory or history [36 CFR 60.4].

The 1992 amendments to the NHPA enhance the recognition of tribal governments' roles in the national historic preservation program, including adding a member of an Indian tribe or Native Hawaiian organization to the ACHP.

The NHPA amendments:

- Clarify that properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization may be determined eligible for inclusion in the National Register
- Reinforce the provisions of the Council's regulations that require the federal agency to consult on properties of religious and cultural importance.

The 1992 amendments also specify that the ACHP can enter into agreement with tribes that permit undertakings on tribal land and that are reviewed under tribal regulations governing Section 106. Regulations implementing the NHPA state that a federal agency must consult with any Indian tribe that attaches religious and cultural significance to historic properties that may be affected by an undertaking.

State

California Register of Historical Resources (CRHR)

In California, the term "historical resource" includes but is not limited to "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California." (PRC section 5020.1(j).) In 1992, the California legislature established the CRHR "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change." (PRC section 5024.1(a).) The criteria for listing resources on the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the NRHP, enumerated below. According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

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

(2) Is associated with the lives of persons important in our past.

(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

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

In order to understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than fifty years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see Cal. Code Regs., tit. 14, section 4852(d)(2)).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are the state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

California Environmental Quality Act

As described further below, the following CEQA statutes and CEQA Guidelines are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

- PRC section 21083.2(g) defines "unique archaeological resource."
- PRC section 21084.1 and CEQA Guidelines section 15064.5(a) defines "historical resources." In addition, CEQA Guidelines section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource;" it also defines the circumstances when a project would materially impair the significance of an historical resource.
- PRC section 21074(a) defines "tribal cultural resources."
- PRC section 5097.98 and CEQA Guidelines section 15064.5(e): Set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
- PRC sections 21083.2(b)-(c) and CEQA Guidelines section 15126.4: Provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures; preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context, and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

More specifically, under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource." (PRC section 21084.1; CEQA Guidelines section 15064.5(b).) If a site is either listed or eligible for listing in the CRHR, or if it is included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC section 5024.1(q)), it is a "historical resource" and is presumed to be historically or culturally significant for purposes of CEQA. (PRC section 21084.1; CEQA Guidelines section 15064.5(a).) The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption. (PRC section 21084.1; CEQA Guidelines section 15064.5(a).)

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired." (CEQA Guidelines section 15064.5(b)(1); PR Code section 5020.1(q).) In turn, the significance of an historical resource is materially impaired when a project:

(1) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or

(2) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(3) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA.

(CEQA Guidelines section 15064.5(b)(2).) Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any "historical resources," then evaluates whether that project will cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance is materially impaired.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (Section 21083.2[a], [b], and [c]).

Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Impacts to non-unique archaeological resources are generally not considered a significant environmental impact (PRC section 21083.2(a); CEQA Guidelines section 15064.5(c)(4).) However, if a non-unique archaeological resource qualifies as tribal cultural resource (PRC 21074(c); 21083.2(h)), further consideration of significant impacts is required.

CEQA Guidelines section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described below, these procedures are detailed in PRC section 5097.98.

California State Assembly Bill 52

AB 52 of 2014 amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 established that TCRs must be considered under CEQA and also provided for additional Native American consultation requirements for the lead agency. Section 21074 describes a TCR as a site, feature, place, cultural landscape, sacred place, or object that is considered of cultural value to a California Native American tribe. A TCR is either:

- On the CRHR or a local historic register; Eligible for the CRHR or a local historic register; or
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1.

AB 52 formalizes the lead agency–tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the project, including tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or EIR.

Section 1 (a)(9) of AB 52 establishes that "a substantial adverse change to a TCR has a significant effect on the environment." Effects on TCRs should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures "capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource." Further, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to TCRs, the consultation shall include those topics (PRC Section 21080.3.2(a)). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (PRC Section 21082.3(a)).

Senate Bill 18

The Local and Tribal Intergovernmental Consultation process, commonly known as Senate Bill (SB) 18 was signed into law September of 2004 and took effect March 1, 2005. SB 18 refers to PRC §5097.9 and 5097.995 which defines cultural places as:

- Native American sanctified cemetery place of worship, religious or ceremonial site, or sacred shrine (PRC §5097.9).
- Native American historic, cultural, or sacred site, that is listed or may be eligible for listing in the California Register of Historic Resources pursuant to Section 5024.1, including any historic or prehistoric ruins, any burial ground, any archaeological or historic site (PRC §5097.993).

SB 18 established responsibilities for local governments to contact, provide notice to, refer plans to, and consult with California Native American Tribes that have been identified by the NAHC and if that tribe requests consultation after local government outreach as stipulated in Government Code (GC) §65352.3. The purpose of this consultation process is to protect the identity of the cultural place and to develop appropriate and dignified treatment of the cultural place in any subsequent project. The consultation is required whenever a general plan, specific plan, or open space designation is proposed for adoption or to be amended.

In addition to the requirements stipulated above, SB 18 amended GC §65560 to "allow the protection of cultural places in open space element of the general plan" and amended Civil Code §815.3 to add "California Native American tribes to the list of entities that can acquire and hold conservation easements for the purpose of protecting their cultural places."

As part of the application process, California Native American Tribes must be given the opportunity to consult with the applicant of the project (City of Long Beach (City)) for the purpose of preserving, mitigating impacts to, and identifying cultural places located on project land. The Proposed Project involves a General Plan Amendment and Specific Plan development to approximately 437-acres of the Project Globemaster Corridor Specific Plan Area (Plan Area); therefore, SB 18 applies to the project. The consultation process initiated by the City for the Proposed Project began on September 6, 2018. The period for the tribes to request consultation is 90 days after this request is received. To date, the City has received one response to the SB 18 consultation letters from the Gabrieleno Band of Mission Indians – Kizh Nation. Once local governments have sent notification, tribes are responsible for requesting consultation. Pursuant to GC §65352.3(a)(2), each tribe has 90 days from the date on which they receive notification to respond and request consultation.

California Health and Safety Code

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the County coroner has examined the remains (section 7050.5b). PRC Section 5097.98 also outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the California Native American Heritage Commission (NAHC) within 24 hours (section 7050.5c). The NAHC will notify the Most Likely Descendant. With the permission of the landowner, the Most Likely Descendant may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the Most Likely Descendant by the NAHC. The Most Likely Descendant may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

3.12.3 Thresholds of Significance

The following significance criteria are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.), and will be used to determine the significance of potential TCR impacts. Impacts related to TCR would be significant if the Proposed Project would cause a substantial adverse change in the significance of a TCR, 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. 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).

B. 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.

The IS found that the Proposed Project could have a potentially significant impact to TCRs (Appendix A-1). As such, all impacts area fully addressed in this Draft PEIR/ PEIS.

3.12.4 Impacts Analysis

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 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)?

A CHRIS records search was conducted at the SCCIC on September 5, 2018, for the Plan Area and within a 0.5-mile radius of the Plan Area. The CHRIS search included a review of mapped prehistoric, historical, and built-environment resources; the California Office of Historic Preservation's Department of Parks and Recreation site records; technical reports; archival resources; and ethnographic references. Additional consulted sources include historical maps of the Plan Area, the NRHP, the CRHR, the California Historic Property Data File, and the lists of California State Historical Landmarks, California Points of Historical Interest, and the Archaeological Determinations of Eligibility. The records search identified eight resources within the 0.5-mile record search area. Of these resources, six are built-environment resources, two of which are located within the Plan Area. The other two resources, P-19-000838/CA-LAN-838 and P-19-000839/CA-LAN-839, are prehistoric sites comprised of shell midden deposits that were recorded in 1971, 1973, and 1987; however, these prehistoric sites were identified outside the Plan Area. Two of the six built environment resources have been determined eligible for listing on the CRHR and one built environment resource appears eligible for the NRHP. None of these resources were identified as TCRs by California Native American tribes as part of the City's AB 52 and SB 18 process.

CEQA Impact Determination

No previously recorded archaeological resources of Native American origin or TCRs listed in the CRHR or a local register were identified within the Plan Area. Furthermore, no listed TCRs have been identified by California Native American tribes as part of the City's AB 52 and SB 18 notification and consultation process. Impacts would be **less than significant** under CEQA. No mitigation is required.

NEPA Impact Determination

No previously recorded archaeological resources of Native American origin or TCRs listed in the CRHR or a local register were identified within the Plan Area. Furthermore, no listed TCRs have been identified by California Native American tribes as part of the City's AB 52 and SB 18 notification and consultation process. As such, there would be **no adverse effect** under NEPA.

b) 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.)

The NAHC provided the City with a list of five Native American tribes or individuals who may have knowledge of cultural resources in the Plan Area. On September 6, 2018, the City mailed certified notification letters to all five contacts provided by the NAHC as part of the City's AB 52 and SB 18 notification and consultation process. The City received one request for consultation from the Gabrieleño Band of Mission Indians-Kizh Nation. As discussed in the project description, the Plan Area is within an urbanized area and has been previously graded and paved. Because the Plan Area has been developed previously, any surficial archaeological resources, human remains, or TCRs that may have been present at one time have likely been disturbed and the likelihood of encountering intact resources is low. However, during tribal consultation, the Gabrieleno Band of Mission Indians – Kizh Nation noted that the Plan Area is in an area that is traditionally or culturally affiliated within the geographic area. While there is no evidence that TCRs exist on the surface of the Plan Area, it is possible that previously unknown TCRs could exist in undisturbed soils on the site. During consultation, the Gabrieleno Band of Mission Indians – Kizh Nation provided mitigation measures in order to avoid or limit potential impacts of project construction on TCRs. Consultation was concluded on July 8, 2020. Mitigation measures **MM-TCR-1** through **MM-TCR-9** include provisions for tribal monitors during ground disturbing activities and procedures in the event of unanticipated discovery.

Therefore, protocols for the inadvertent discovery of TCRs are included as mitigation measures **MM-TCR-1** through **MM-TCR-9**, which will reduce the potentially significant impact to a less than significant level.

CEQA Impact Determination

With the implementation of mitigation measures **MM-TCR-1** through **MM-TCR-9**, impacts are considered **less than significant with mitigation incorporated** under CEQA.

NEPA Impact Determination

With the implementation of mitigation measures **MM-TCR-1** through **MM-TCR-9**, there would be **no adverse effects** under NEPA.

3.12.5 Cumulative Impacts

The cumulative impacts analysis on TCRs considers whether impacts of the Proposed Project together with other related projects identified within the vicinity of the Plan Area, substantially diminish the number of TCRs within the same or similar context. There are no known TCRs within the Plan Area, and as such, the Plan Area is not part of an existing or known grouping of TCRs that would be impacted as part of the cumulative impacts of implementing the Proposed Project with other area related projects. It is anticipated that TCRs that are potentially affected by related projects would also be subject to the same requirements of CEQA as the Proposed Project and any impacts would be mitigated, as applicable. At this time, it is not known whether and to what extent these related projects would result in impacts to TCRs, or whether such impacts can be mitigated to less than significant levels. As such, these determinations would be made on a case-by-case basis, by employing the recommended mitigation resulting from tribal consultation for each future development under the Proposed Project, and the effects of cumulative development on TCRs would be mitigated to the extent feasible in accordance with CEQA, NEPA, and other applicable legal requirements. The Proposed Project would not cumulatively contribute to a significant impact, and as such, the cumulative impact is considered **less than significant with mitigation incorporated**.

3.12.6 Mitigation Measures

MM-TCR-1 Prior to the issuance of any Grading Permit a project, the City of Long Beach Development Services Department shall ensure that the construction contractor provide access for Native American monitoring during ground-disturbing activities. This provision shall be included on project plans and specifications. The site shall be made accessible to any Native American tribe requesting to be present, provided adequate notice is given to the construction contractor and that a construction safety hazard does not occur.

MM-TCR-2 Should a potential TCR be encountered and no monitors are present, construction activities near the encounter shall be temporarily halted within 50 feet of the discovery and the City notified. The City will notify Native American tribes that have been identified by the Native American Heritage Commission to be traditionally and culturally affiliated with the geographic area of the Proposed Project. If the potential resource is archaeological in nature, appropriate management requirements shall be implemented as outlined in mitigation measure **MM-CUL-1** (see Section 3.3.6, Cultural

Resources Mitigation Measures). If the City determines that the potential resource is a TCR (as defined by PRC, Section 21074), tribes consulting under AB 52 and SB 18 would be provided a reasonable period of time, typically 5 days from the date a new discovery is made, to conduct a site visit and make recommendations regarding future ground disturbance activities, as well as the treatment and disposition of any discovered TCRs. A qualified archaeologist shall implement a plan for the treatment and disposition of any discovered TCRs based on the nature of the resource and shall consider the recommendations of the tribe(s). Implementation of proposed recommendations will be made based on the determination of the City that the approach is reasonable and feasible. All activities shall be conducted in accordance with applicable regulatory requirements.

MM-TCR-3 **Native American Monitor/Consultant**. The Project Applicant shall be required to retain and compensate for the services of a Tribal monitor/consultant who is both approved by the Gabrieleño Band of Mission Indians-Kizh Nation Tribal Government and is listed under the NAHC's Tribal Contact list for the area of the project location. This list is provided by the NAHC. The monitor/consultant will only be present on-site during the construction phases that involve ground disturbing activities. Ground disturbing activities are defined by the Gabrieleño Band of Mission Indians-Kizh Nation as activities that may include, but are not limited to, pavement removal, pot-holing or auguring, grubbing, tree removals, boring, grading, excavation, drilling, and trenching, within the Plan Area. The Tribal Monitor/consultant will complete daily monitoring logs that will provide descriptions of the day's activities, including construction activities, locations, soil, and any cultural materials identified. The on-site monitoring shall end when the Plan Area grading and excavation activities are completed, or when the Tribal Representatives and monitor/consultant have indicated that the site has a low potential for impacting Tribal Cultural Resources.

MM-TCR-4 Unanticipated Discovery of Tribal Cultural and Archaeological Resources. Upon discovery of any archaeological resources, cease construction activities in the immediate vicinity of the find until the find can be assessed. All archaeological resources unearthed by project construction activities shall be evaluated by the qualified archaeologist and tribal monitor/consultant approved by the Gabrieleño Band of Mission Indians-Kizh Nation. If the resources are Native American in origin, the Gabrieleño Band of Mission Indians-Kizh Nation shall coordinate with the landowner regarding treatment and curation of these resources. Typically, the Tribe will request reburial or preservation for educational purposes. Work may continue on other parts of the project while evaluation and, if necessary,

mitigation takes place (CEQA Guidelines Section15064.5 [f]). If a resource is determined by the qualified archaeologist to constitute a "historical resource" or "unique archaeological resource", time allotment and funding sufficient to allow for implementation of avoidance measures, or appropriate mitigation, must be available. The treatment plan established for the resources shall be in accordance with CEQA Guidelines Section 15064.5(f) for historical resources and Public Resources Code Sections 21083.2(b) for unique archaeological resources. Preservation in place (i.e., avoidance) is the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. Any historic archaeological material that is not Native American in origin shall be curated at a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County or the Fowler Museum, if such an institution agrees to accept the material. If no institution accepts the archaeological material, they shall be offered to a local school or historical society in the area for educational purposes.

MM-TCR-5 **Unanticipated Discovery of Human Remains and Associated Funerary Objects.** Native American human remains are defined in PRC 5097.98 (d)(1) as an inhumation or cremation, and in any state of decomposition or skeletal completeness. Funerary objects, called associated grave goods in PRC 5097.98, are also to be treated according to this statute. Health and Safety Code 7050.5 dictates that any discoveries of human skeletal material shall be immediately reported to the County Coroner and excavation halted until the coroner has determined the nature of the remains. If the coroner recognizes the human remains to be those of a Native American or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission (NAHC) and PRC 5097.98 shall be followed.

MM-TCR-6 **Resource Assessment & Continuation of Work Protocol**. Upon discovery, the tribal and/or archaeological monitor/consultant/consultant will immediately divert work at minimum of 150 feet and place an exclusion zone around the burial. The monitor/consultant(s) will then notify the Tribe, the qualified lead archaeologist, and the construction manager who will call the coroner. Work will continue to be diverted while the coroner determines whether the remains are Native American. The discovery is to be kept confidential and secure to prevent any further disturbance. If the finds are determined to be Native American, the coroner will notify the NAHC as mandated by state law who will then appoint a Most Likely Descendent (MLD).

MM-TCR-7 **Kizh-Gabrieleno Procedures for burials and funerary remains**. If the Gabrieleno Band of Mission Indians – Kizh Nation is designated MLD, the following treatment measures shall be implemented. To the Tribe, the term "human remains" encompasses more than human bones. In ancient as well as historic times, Tribal Traditions included, but were not limited to, the burial of funerary objects with the deceased, and the ceremonial burning of human remains. These remains are to be treated in the same manner as bone fragments that remain intact. Associated funerary objects are objects that, as part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later; other items made exclusively for burial purposes or to contain human remains can also be considered as associated funerary objects.

MM-TCR-8 **Treatment Measures**. Prior to the continuation of ground disturbing activities, the land owner shall arrange a designated site location within the footprint of the project for the respectful reburial of the human remains and/or ceremonial objects. In the case where discovered human remains cannot be fully documented and recovered on the same day, the remains will be covered with muslin cloth and a steel plate that can be moved by heavy equipment placed over the excavation opening to protect the remains. If this type of steel plate is not available, a 24-hour guard should be posted outside of working hours. The Tribe will make every effort to recommend diverting the project and keeping the remains in situ and protected. If the project cannot be diverted, it may be determined that burials will be removed. The Tribe will work closely with the qualified archaeologist to ensure that the excavation is treated carefully, ethically and respectfully. If data recovery is approved by the Tribe, documentation shall be taken which includes at a minimum detailed descriptive notes and sketches. Additional types of documentation shall be approved by the Tribe for data recovery purposes. Cremations will either be removed in bulk or by means as necessary to ensure completely recovery of all material. If the discovery of human remains includes four or more burials, the location is considered a cemetery and a separate treatment plan shall be created. Once complete, a final report of all activities is to be submitted to the Tribe and the NAHC. The Tribe does NOT authorize any scientific study or the utilization of any invasive diagnostics on human remains.

Each occurrence of human remains and associated funerary objects will be stored using opaque cloth bags. All human remains, funerary objects, sacred objects and objects of cultural patrimony will be removed to a secure container on site if possible. These items should be retained and reburied within six months of recovery. The site of reburial/repatriation shall be on the Plan Area

but at a location agreed upon between the Tribe and the landowner at a site to be protected in perpetuity. There shall be no publicity regarding any cultural materials recovered.

MM-TCR-9 **Professional Standards**. Archaeological and Native American monitoring and excavation during construction projects will be consistent with current professional standards. All feasible care to avoid any unnecessary disturbance, physical modification, or separation of human remains and associated funerary objects shall be taken. Principal personnel must meet the Secretary of Interior standards for archaeology and have a minimum of 10 years of experience as a principal investigator working with Native American archaeological sites in southern California. The Qualified Archaeologist shall ensure that all other personnel are appropriately trained and qualified.

3.12.7 Significant After Mitigation

Implementation of mitigation measures **MM-TCR-1** through **MM-TCR-9** would ensure impacts after mitigation are **less than significant**.

3.12.8 References

City of Long Beach. 2015. "Criteria for Designation of Landmarks and Landmark Districts." Municipal Code, Title 2, Chapter 2.63.050.

NPS (National Park Service, U.S. Department of the Interior). 1990. *National Register Bulletin: Technical Information on the National Register of Historic Places: Survey, Evaluation, Registration, and Preservation of Cultural Resources*. How to Apply the National Register Criteria for Evaluation. https://www.nps.gov/nr/publications/bulletins/pdfs/nrb15.pdf.

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3.13 UTILITIES AND SERVICE SYSTEMS

This section describes the utilities and service systems that would serve the Globemaster Corridor Specific Plan (GCSP; Proposed Project) area; identifies associated regulatory requirements, and analyzes the Proposed Project's impacts to utilities and service systems. The following discussion focuses on the existing utilities and service systems in the City of Long Beach (City) and more specifically, the Plan Area.

The Initial Study (IS) and Notice of Preparation (NOP) are contained in Appendix A-1, Initial Study; and Appendix A-2, Notice of Preparation, respectively. Comments regarding utilities and service systems, received in response to the NOP (see Appendix A-3, Notice of Preparation Comment Letters), specifically related to potential disruption of water supply infrastructure and wastewater infrastructure capacity, have been considered in the preparation of the analyses presented in this section.

The IS found that the Proposed Project would have less than significant impacts as it relates to compliance with solid waste disposal-related statutes and regulations (Appendix A-1). As such, this impact will not be addressed further in this Draft Program Environmental Impact Report (PEIR)/Draft Program Environmental Impact Statement (PEIS).

3.13.1 Existing Conditions

Sewer System

The Proposed Project is located within the jurisdictional boundaries of Los Angeles County Sanitation District (LACSD) No. 3. The LACSD owns, operates, and maintains the large trunk sewers that form the backbone of the regional wastewater conveyance system. Local collector and/or lateral sewer lines are the responsibility of the jurisdiction in which those lines are located. The Long Beach Water District (LBWD), which operates and maintains approximately 765 miles of sanitary sewer lines, is the jurisdiction with responsibility of the local collector and/or lateral sewer lines. The wastewater generated by the City of Long Beach (City) is treated at the Joint Water Pollution Control Plant, located in the City of Carson, which has a capacity of 400 million gallons per day (mgd) and currently produces an average flow of 254.7 mgd. As a result, the facility has a remaining capacity of 145.3 mgd. In addition, wastewater generated in the City is treated at the Long Beach Water Reclamation Plant, located at 7400 East Willow Street, which has a capacity of 25 mgd and currently produces an average recycled water flow of 9.8 mgd (LACSD 2018a). As a result, the facility has a remaining capacity of 15.2 mgd. Combined, these two facilities have a remaining capacity of 160.5 mgd. Tertiary treated sewage from these facilities is used to irrigate public landscaping through the recycled water program and recharge the groundwater basin. The wastewater infrastructure for the immediate Plan Area vicinity primarily consists of vitrified clay pipe.

Storm Drain System

Both the City and the Los Angeles County Flood Control District (LACFCD) maintains storm drain mains within the City. The City currently maintains an intricate storm drain system, consisting of streets and gutters, catch basins, and underground pipes, ditches, streams/creeks, pump stations, and channels/rivers. This storm drain system transmits storm waters away from residential and business uses in the City to designated drainage areas, including the Los Angeles and San Gabriel Rivers. In order to ensure proper function of the City storm drain system, the City implements the Long Beach Stormwater Management Plan, which is a comprehensive program containing several elements, practices, and activities aimed at reducing or eliminating pollutants in stormwater to the maximum extent practicable. In addition, the City performs bi-annual maintenance work on the storm drain system, in addition to emergency repair work on an as-needed basis (City of Long Beach 2017, 2019a).

The LACFCD provides stormwater collection and conveyance for a majority of the City. In the immediate Plan Area vicinity, as-built storm drain plans illustrate a collection system commencing near the intersection of Spring Street and Lakewood Boulevard, which ultimately terminates near Orange Avenue. Pipe sizes for this particular section of storm drain system range from 66- to 96-inch diameter, reinforced concrete pipe (RCP), and includes a 9- by 7-foot rectangular reinforced concrete box for a small portion. An adjacent storm drain collection system running north and south along Cherry Avenue, between 33rd Street and 36th Street, contributes to the larger storm drain system. See Figure 2-2, Local Context, in Chapter 2.0 (Project Description) for street locations (City of Long Beach 2018a).

The existing storm drain system starting near the intersection of Walnut Avenue and Tehachapi Drive, which flows east to Cherry Avenue, then south to Bixby Road, then east along Bixby Road, will service the northerly portion of the Plan Area with RCP pipes ranging from 36 to 78 inches in diameter. The existing storm drain system starting near the intersection of Walnut Avenue and 28th Street, which flows north to Spring Street, then west to Orange Avenue, will service the southwesterly portion of the Plan Area with RCP ranging from 30 to 54 inches in diameter (City of Long Beach 2018a).

Water Service

The LBWD provides water services to the entire City, through a series of underground pipelines. The service area includes over 912 miles of water mains, with nearly 90,000 active service connections (LBWD 2018). As indicated in Table 3.13-1, Water Supplies – Current and Projected, the major sources of water for the LBWD include imported water, purchased from the Metropolitan Water District of Southern California (MWD); groundwater pumped and treated by the LBWD; and recycled water. In addition, the LBWD is partnering with other water agencies to

conduct ongoing research into other possible new water supplies, including desalinated seawater, and actively supports water conservation measures to reduce water demand (MWD 2016).

Table 3.13-1
Water Supplies – Current and Projected (af/yr)

Water Purchased From	2015	2020	2025	2030	2035	2040
Groundwater	32,693	33,001	33,501	34,001	34,501	35,001
Imported	35,100	35,100	35,100	35,100	35,100	35,100
Recycled Water	9,190	9,190	9,190	9,190	9,190	9,190
Total	**76,983**	**77,291**	**77,791**	**78,291**	**78.791**	**79,291**

Source: Long Beach Water Department 2016
Notes: af/yr = acre-feet per year

Fire Flow

The City adopted the California Fire Code, with some amendments and modifications, as part of the Long Beach Municipal Code. Generally, the intent of the California Fire Code is to prescribe regulations consistent with nationally recognized good practices for the safeguarding of life and property from the hazard of fire and explosion. Fire flow is the quantity of water available or needed for fire protection in a given area, and is normally measured in gallons per minute (gpm), as well as the duration of flow. Fire flow requirements, found in the Long Beach Municipal Code, are based on building types and floor area and range from 1,250 to 8,000 gpm, at 20 pounds per square inch (psi).

In accordance with the California Fire Code, the Long Beach Fire Department (LBFD) requires the installation of sprinkler systems in many new buildings, including retail buildings in excess of 5,000 square feet and buildings greater than 55 feet in height. In addition, on-site hydrants are required in any portion of a project site that exceeds the allowable distance from a public hydrant located in the right-of-way. Fire flow requirements are subject to LBFD standards, based on the type of building and its uses on a case-by-case basis.

Solid Waste and Recycling Services

Solid waste collection services are provided by the City's Environmental Services Bureau; however, the City is also a member of the LACSD. Based on solid waste generation rates identified from the California Department of Resources Recycling and Recovery (CalRecycle), it was estimated that the annual tonnage of solid waste generated in the City in 2012 was 260,964 tons per year (City of Long Beach 2017; CalRecycle 2018).

A large majority of the City's solid waste is disposed of at the Southeast Resource Recovery Facility (SERRF). The City and LACSD have a Joint Powers Agreement to operate the SERRF, located at 120 Pier S Avenue in Long Beach. SERRF is a refuse-to-energy transformation

facility, which was developed to reduce the amount of waste to be managed and to reduce the consumption of natural resources. The SERRF reduces the volume of solid waste by approximately 80 percent, while creating electrical energy. The SERRF produces 36 megawatts of electricity for Southern California Edison, which is enough to supply 35,000 homes with electrical power (City of Long Beach 2017).

Solid waste from the existing uses in the City is collected and trucked to the SERRF, where it is processed through one of three boilers. In addition, the SERRF performs "front-end" and "back-end" recycling, by recovering items such as white goods (i.e., large electrical goods used domestically, such as refrigerators and washing machines), prior to incineration and collection of metals removed from the boilers after incineration. Each month, an average of 825 tons of metal are recycled rather than sent to a landfill. The Solid Waste Facility Permit from the County Solid Waste Management Program for the SERRF authorizes the disposal of a maximum of 2,240 tons per day. Currently, the SERRF processes approximately 1,345 tons per day. Remaining capacity and estimated closure dates are not determined because the SERRF is a transformation facility that never reaches capacity, as it continually converts solid waste to energy and ash. In 2012, approximately 203,040 tons, or 47 percent, of the solid waste disposed of by the Long Beach residents and businesses were disposed of at the SERRF (Los Angeles County 2017; City of Long Beach 2017, 2019b; LACSD 2018b).

In 2013, the Puente Hills Landfill closed after 56 years of operation. As such, solid waste considered not suitable for processing at the SERRF and generated in the City is taken to landfills in Orange, San Bernardino, and Riverside counties (see Table 3.13-2, Capacity of Landfills Serving the City of Long Beach [2012]) (Los Angeles Daily News 2013). Solid waste would not be consider suitable for processing at the SERRF if it would: 1) damage or threaten to damage combustion units or otherwise adversely affect maintenance of the SERRF; 2) present a substantial endangerment to the health or safety of the public or SERRF employees; 3) cause any permit requirement or condition to be violated; or 4) exceed the materials handling capacity of the combustion feed system (City of Long Beach 2018b). Upon closure of the Puente Hills Landfill, residents and commercial haulers are encouraged to use other nearby LACSD facilities for disposal and recycling. Alternative disposal options include two ramped-up Material Recovery Facilities (MRFs), operated by LACSD, including the Downey Area Recycling and Transfer Facility in Downey, and the Puente Hills MRF, located at the base of the Puente Hills Landfill. In addition, completed in 2011 and owned and operate by LACSD, the Mesquite Regional Landfill is permitted to receive up to 20,000 tons of municipal solid waste per day, with a total capacity of 600 million tons of municipal waste (LACSD 2018c).

Table 3.13-2
Capacity of Landfills Serving the City of Long Beach

Landfill and Location	Remaining Capacity	Maximum Permitted Throughput (tons/day)	Estimated Closing Date
Antelope Valley Public Landfill (Palmdale, CA)	17,911,225cubic yards	5,548	4/1/2044
Azusa Land Reclamation Co. Landfill (Azusa, CA)	51,512,201 cubic yards	8,000	01/01/2045
Chiquita Canyon Sanitary Landfill (Castaic, CA)	60,408,000 cubic yards	12,000	1/1/2047
Commerce Refuse-To-Energy Facility (Commerce, CA)	1,000 tons/day (permitted capacity)	1,000	N/A
El Sobrante Landfill (Corona, CA)	143,977,170 Tons	16,054	01/01/2015
Frank R. Bowerman Sanitary Landfill (Irvine, CA)	205,000,000 cubic yards	11,500	12/31/2053
Kettleman Hills - B18 Nonhaz Codisposal (Kettleman City, CA)	15,600,000 cubic yards	8,000	N/A
Lancaster Landfill and Recycling Center (Lancaster, CA)	14,514,648 cubic yards	5,100	03/01/2044
McKittrick Waste Treatment Site (McKittrick, CA)	769,790 cubic yards	3,500	12/31/2059
Mid-Valley Sanitary Landfill (Rialto, CA)	61,219,377 cubic yards	7,500	04/01/2045
Olinda Alpha Sanitary Landfill (Brea, CA)	34,200,000 cubic yards	8,000	12/31/2021
Prima Deshecha Sanitary Landfill (San Juan Capistrano, CA)	134,300,000 cubic yards	4,000	12/31/2102
Puente Hills Landfill (Closed) (Industry, CA)	N/A	N/A	10/31/2013
San Timoteo Sanitary Landfill (Redlands, CA)	12,360,396 cubic yards	2,000	01/01/2039
Savage Canyon Landfill (Whittier, CA)	9,510,833 cubic yards	3,350	12/31/2055
Simi Valley Landfill & Recycling Center (Simi Valley, CA)	119,600,000 cubic yards	9,250	01/31/2052
Southeast Resource Recovery Facility (Long Beach, CA)	2,240 tons/day (permitted capacity)	2,240	N/A
Sunshine Canyon City/County Landfill (Los Angeles County, CA)	77,900,000 cubic yards	12,100	10/31/2037

Source: CalRecycle 2020.
N/A = not applicable

Electric Power

Electric utilities are currently being serviced by Southern California Edison (SCE), which provides energy services to the Plan Area, the City, and the greater southern California area. Based on an SCE interactive distribution map, last updated September 14, 2012, three substations (5738, 5753

and 5785) service the Plan Area with overlapping coverage. According to the data: 1) substation 5738 has a maximum available capacity of 7.75 megavolt amperes (MVA) but has no current available capacity (0 MVA); 2) substation 5753 has a maximum available capacity of 4.37 MVA but also has no current available capacity (0 MVA); and 3) substation 5785 has a maximum available capacity of 10.0 MVA and a currently available capacity of 0.9 MVA. Although all of the substations servicing the area appear to be at or near capacity, the existing system is sufficient to meet the existing demands of the current land uses (Dudek 2016).

Natural Gas

Southern California Gas Company (SoCalGas), Gas Transmission Department, operates and maintains a 12-inch, high-pressure natural gas transmission pipeline (Number 512), which lies beneath Cherry Avenue in the Plan Area. However, SoCalGas has no other facilities in the Plan Area, as gas is supplied to the Plan Area by the Long Beach Energy Resources Department (SoCalGas 2016).

The Long Beach Energy Resources (LBER) Department, also known as the Long Beach Gas and Oil Department (LBGO), provides service to approximately 500,000 residents and businesses in the cities of Long Beach and Signal Hill (Long Beach Energy Resources Department 2019). Based on atlas maps provided by LBER, existing gas mains ranging from 10 to 20 inches are located in Cherry Avenue, with 4-inch gas mains also available along the study area perimeter. Based on a general assessment of these facility maps, the current gas infrastructure appears acceptable to meet the demands of the current land uses (Dudek 2016).

Telecommunication

The Technology & Innovation Department of the City of Long Beach is responsible for monitoring three cable franchises in the City of Long Beach, including Spectrum Communications, Frontier Communications, and AT&T U-verse. All three companies hold a franchise issued by the California Public Utility Commission to provide their services to all residents in the City (City of Long Beach Technology & Innovation 2019).

3.13.2 Regulatory Setting

Federal

There are no applicable federal policies or regulations related to the Proposed Project.

State

Urban Water Management Planning Act

The Urban Water Management Planning Act of 1983 requires: 1) preparation of a strategy that plans for water supply and assesses the reliability of water sources over a 20-year period, in 5-year increments; 2) identifies and quantifies adequate water supplies for existing and future demands under normal, single-dry, and multiple-dry years; and 3) implements conservation controls to ensure the efficient use of urban water supplies. Requirements set forth in the Urban Water Management Plan (UWMP) apply to every urban water supplier with 3,000 customers or more that provides over 3,000 acre-feet of water per year (af/yr), to ensure reliability in water service to meet the needs of customers during normal, dry, and multiple dry years.

Governor's Drought Declaration

On January 17, 2014, Governor Brown proclaimed a State of Emergency asking Californians to reduce water use by 20 percent and directing State officials to take all necessary actions to make water available. Additional key measures in the proclamation include the following: 1) directing water suppliers to implement water shortage contingency plans; 2) ordering the State Water Resources Control Board (SWRCB) to consider petitions for consolidation of places of use for the State Water Project and Central Valley Project, in an effort to streamline water transfers and exchanges between water users; 3) directing the California Department of Water Resources (DWR) and the SWRCB to accelerate funding for projects that would have broken ground in 2014 and would enhance water supplies; 4) ordering the SWRCB to notify water rights holders across the State that they may be directed to cease or reduce water diversions based on water shortages; and 5) requiring the SWRCB to consider modifying requirements for releases of water from reservoirs or diversion limitations to conserve water in reservoirs and improve water quality.

Following the Governor's drought declaration, the California DWR announced on January 31, 2014 that if current dry conditions persist, customers would receive no deliveries from the State Water Project. Deliveries to agricultural districts with long-standing water districts were determined to be at risk for a potential 50% reduction.

On April 25, 2014, the Governor issued an executive order to accelerate actions intended to reduce harmful effects of the drought and called on Californians to redouble their efforts to conserve water. On July 15, 2014, the SWRCB approved an emergency regulation requiring water conservation for outdoor water use. Subsequently, on December 22, 2014, Governor Brown issued Executive Order (EO) B-28-14, which extends the operation of the provisions outlined in the April 2014 executive order.

On April 1, 2014, the Governor issued EO B-29-15, which ordered the SWRCB to impose restrictions to achieve a 25% reduction in potable urban water usage through the end of February 2016; directed the DWR to lead a statewide initiative to replace 50 million square feet of lawns and turf with drought-tolerant landscapes; and directed the California Energy Commission to implement a statewide rebate program for the replacement of inefficient household devices. The LBWD has been found compliant with the EO and State Board rules, exceeding the required reduction in water usage (City of Long Beach 2016).

Senate Bill 610

Enacted in 2001 (effective January 1, 2002), Senate Bill 610 Water Supply Assessment (SB 610 WSA) added Section 21159.9 to the Public Resources Code, requiring that any proposed "project," as defined in Section 10912 of the Water Code, comply with Water Code Section 10910, et seq. 53, commonly referred to as a "SB 610 Water Supply Assessment." Water Code Section 10910 et seq. outlines the necessary information and analysis that must be included in an environmental impact report (EIR) to ensure that a proposed land development has sufficient water supply to meet existing and planned water demands over a 20-year projection.

The standard for the certainty and reliability of water supplies sufficient to meet the demands of the proposed development is more exacting than that required for the UWMP. Ultimately, because the SB 610 WSA is a source document for an EIR prepared for a project, pursuant to the California Environmental Quality Act (CEQA), it must provide substantial evidence showing that sufficient water will be available to meet water demands for the water purveyor's existing and planned uses, over a 20-year planning horizon.

The initial question in conducting an SB 610 WSA is whether there is a "project" that is subject to the SB 610 WSA process. According to the SB 610 WSA requirements, a "project" is defined as any of the following:

- Residential developments of more than 500 dwelling units;
- Shopping centers or business establishments employing more than 1,000 persons or having more than 500,000 square feet of floor space;
- Commercial office buildings employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- Hotels, motels, or both, having more than 500 rooms;
- Industrial, manufacturing, or processing plants, or industrial parks planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area;

- Mixed-use projects that include one or more of the projects specified in Water Code Section 10912(a); or
- Projects that would demand an amount of water equivalent to or greater than the amount of water required by a 500-dwelling-unit project.

If a public water system has fewer than 5,000 service connections, then "project" means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10% or more in the number of the public water system's existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10% or more in the number of the public water system's existing service connections.

Senate Bill 7

SB X7-7 was enacted in 2009, authorizing the DWR to prepare a plan implementing urban water conservation requirements. SB X7-7, otherwise referred to as the 20×2020 Water Conservation Plan, requires urban water suppliers to adopt a water conservation target of 20% reduction in urban per capita water use by the year 2020, compared to a 2005 baseline. SB X7-7 also requires agricultural water providers to prepare water management plans, measure water deliveries, and implement water efficiency measures.

Senate Bill 1374

SB 1374 requires that the annual report submitted to CalRecycle (formerly known as the California Integrated Waste Management Board [CIWMB]) include a summary of the progress made in the diversion of construction and demolition waste materials. In addition, SB 1374 requires CalRecycle to adopt a model ordinance suitable for adoption by any local agency to require 50 to 75 percent diversion of construction and demolition waste materials from landfills by March 1, 2004. Local jurisdictions are not required to adopt their own construction and demolition ordinances, nor are they required to adopt CalRecycle's model by default. However, adoption of such an ordinance may be considered by CalRecycle when determining whether to impose a fine on a jurisdiction that has failed to implement its Source Reduction and Recycling Element (SRRE).

Assembly Bill 939 – Solid Waste Reduction

The California Integrated Waste Management (CIWM) Act of 1989 (Assembly Bill [AB] 939) was enacted as a result of a national crisis in landfill capacity, as well as a broad acceptance of the hierarchy (i.e., reduce, reuse, recycle, environmentally sound landfilling, and transformation) as the desired approach to solid waste management. AB 939 mandated local jurisdictions to meet waste diversion goals of 25% by 1995 and 50% by 2000, and established an integrated framework for program implementation, solid waste planning, and solid waste facility and landfill compliance.

Other elements included encouraging resource conservation and considering the effects of waste management operations. The diversion goals and program requirements are implemented through a disposal-based reporting system by local jurisdictions under CIWMB regulatory oversight. Since the adoption of AB 939, landfill capacity has increased. Regional capacity problems exist, but capacity is no longer considered the statewide crisis it once was. AB 939 has achieved substantial progress in waste diversion, program implementation, solid waste planning, and protection of public health and safety and the environment from the operation of landfills and solid waste facilities (CalRecycle 1999). The City offers recycling programs for both commercial and residential uses.

Assembly Bill 75

AB 75, passed in 1999, and the State Agency Model Integrated Waste Management Act (Chapter 764, Statutes of 1999, Strom-Martin) took effect on January 1, 2000. This bill added new provisions to the Public Resources Code, mandating that State agencies develop and implement an Integrated Waste Management Plan that outlines the steps to be taken to achieve the required waste diversion goals.

Current statutes require all State agencies and large facilities to divert at least 50% of their solid waste from disposal facilities on and after January 1, 2004. The law requires that each State agency and large facility submit an annual report to CalRecycle summarizing its yearly progress in implementing waste diversion programs. The law also mandates that community service districts providing solid waste services report disposal and diversion information to the city, county, or regional agency in whose jurisdiction those entities are located. In addition to the waste diversion goals, all State agencies are required to buy recycled materials from 12 different categories, ranging from paper and plastic to paint, solvents, and lubricating oils.

Senate Bill 1016

The Per Capita Disposal Measurement System Act (SB 1016) changed the way State agencies and local governments measure their progress toward meeting the statutory waste diversion mandates. State agencies and large State facilities now use per capita disposal as an indicator of their compliance with the 50% waste diversion requirement. Compliance is also determined by diversion program implementation.

Assembly Bill 341

AB 341, enacted in 2011, changed the due date of the State agency waste management annual report to May 1, beginning in 2012. The bill makes a legislative declaration that is the policy goal of the State that not less than 75% of solid waste generated be source reduced, recycled, or composted by 2020.

Local

Long Beach Water Department, Urban Water Management Plan

In accordance with the Urban Water Management Planning Act, the LBWD has prepared a 2015 UWMP, which projects that the LBWD's water supply will increase by 7% from 2015 to 2040 to meet projected water demands.

2005 Stormwater Master Plan

In 2005, the City's Stormwater Master Plan (September 2005) was updated to evaluate the hydraulic capacity of the major storm drain systems within the City boundary. The study has been conducted to provide City officials with a planning tool for future drainage improvements. The analysis includes policies have been built into the updated Stormwater Management System as follows:

- The conveyance capacity of the existing conduit plus the conveyance capacity of the roadway up to the right-of-way line is compared to the runoff from a 25-year storm.
- If the conveyance system is found deficient, then a replacement conduit is sized to convey the full 10-year runoff in a concrete pipe (or box) parallel to and at the same grade as the existing conduit.

The plan includes a list of individual facilities that do not meet the 10-year conveyance requirements. The only substandard City facility in the vicinity of the Plan Area is within the 37th Street right-of-way, as noted on Figure 5-2, Substandard Facilities, in the Stormwater Master Plan. When a conveyance facility had less than a 10-year capacity a replacement facility was sized. The replacement facilities were sized for the full 10-year design flow at the same grade as the existing facility. They provide an indication of the size necessary to replace the existing facility.

Individual deficiencies are grouped into improvement projects. The groupings ensure that overall improvements in a specific area can convey the full 10-year runoff. Prior to proceeding with any of the identified projects, it is recommended that a detailed drainage report be prepared that addresses potential alternatives to upgrade the system. The nearest projects to the Plan Area are as follows:

- Project ID 00004: Bixby Road Storm Drain

Project ID 00007: Stearns Street Storm Drain

Municipal NPDES Permit

The City of Long Beach is subject to the Waste Discharge Requirements for Municipal Separate Storm Sewer System Discharges from the City of Long Beach (Permit No. R4-2014-0024, National Pollutant Discharge Elimination System [NPDES] No. CAS004003) (MS4 Permit),

which was approved February 6, 2014, and became effective on March 28, 2014. This MS4 Permit supersedes Order No. 99-060, issued in 1999. To implement the requirements of the 1999 MS4 Permit, the City developed the Long Beach Storm Water Management Program, a comprehensive program of practices and activities aimed at reducing or eliminating storm water pollutants from new development, to the maximum extent practicable. This program includes customized strategies, control measures, and Best Management Practices (BMPs), consistent with the Los Angeles Regional Water Quality Control Board (RWQCB) Watershed Management Areas.

The City has the option of collaborating with other MS4 permittees on the development of an Enhanced Watershed Management Program, which evaluates the multi-benefits of regional projects and implements regional control measures and BMPs. The Watershed Management Program includes an evaluation of existing water quality conditions, identifying water quality priorities within each Watershed Management Area, selecting watershed control measures, and incorporating compliance schedules. Since 2015, the following watershed management programs have been approved and are currently being implemented: Long Beach Nearshore, Los Cerritos Channel Watershed, Lower Los Angeles River Watershed, and Lower San Gabriel River (City of Long Beach 2016).

Currently, the MS4 permit requires that the project designer and/or contractor of all new development and redevelopment projects that fall under specific "priority" project categories must develop a Standard Urban Stormwater Mitigation Plan (SUSMP). Certain categories of development are considered "priority" because the Los Angeles RWQCB determined that these categories have the greatest potential to degrade water quality. The three categories of "priority" projects include: 1) 10 or more home subdivisions; 2) 100,000 square feet or larger commercial developments; and 3) projects located adjacent to or directly discharging to environmentally sensitive areas. Future development projects occurring under the Proposed Project would be designed in accordance with a MS4 priority project-mandated SUSMP.

Sanitation Districts of Los Angeles County Ordinances

The Sanitation Districts of Los Angeles County adopted a Wastewater Ordinance effective April 1, 1972, as amended on July 1, 1980, July 1, 1983, November 1, 1989, and July 1, 1998, to protect and finance the operation of the Sanitation Districts' wastewater conveyance, treatment, and disposal facilities. Individual sanitation districts also adopted Connection Fee Ordinances in 1981 (which were amended in 1984, 1990, 1992, and 1997). Companies that discharge industrial wastewater to the sewerage system are governed by both the Wastewater Ordinance and the Connection Fee Ordinance for the district in which the discharge is located. These legal mechanisms establish the Sanitation Districts' Industrial Wastewater Discharge Permit, Connection Fee, and Surcharge Programs. The Industrial Wastewater Discharge Permit Program allows for the regulation of industrial wastewater dischargers to protect the public health,

environment, and the public sewerage system. The Surcharge Program requires all industrial companies discharging to the Sanitation Districts' sewerage system to pay their fair share of the wastewater treatment and disposal costs. The Connection Fee Program requires all new users of the Sanitation Districts' sewerage system, as well as existing users that significantly increase the quantity or strength of their wastewater discharge, to pay their fair share of the costs for providing additional conveyance, treatment, and disposal facilities.

City of Long Beach General Plan

Conservation Element (1973)

Public utilities goals are included in the Conservation Element (adopted in 1973) of the City's General Plan. The following goals are applicable to the Proposed Project:

Water Resource Management Goal 1: To assure adequate quantity and quality of water to meet the present and future domestic, agricultural, and industrial needs of the City.

Water Resources Management Goal 5: To maintain, upgrade, and improve water systems and facilities serving Long Beach.

Mobility Element (2013)

The Mobility Element seeks to guide development and improvements to the existing circulation system. Together with the existing circulation system, the Mobility Element considers the mobility of critical resources (e.g., water, energy, and communications). The following goals and policies related to utilities and services systems in the City's Mobility Element are applicable to the Proposed Project.

Strategy No. 19: Promote well-maintained water, wastewater, and stormwater infrastructure systems that serve the demands of existing and future residents and businesses while mitigating environmental impacts.

- **MOR Policy 19-1:** Plan for and provide appropriate levels and types of infrastructure based on the desired character of each neighborhood or district.
- **MOR Policy 19-2:** Ensure that development is appropriate and in scale with current and planned infrastructure capabilities.
- **MOR Policy 19-3:** Promote water-efficient fixtures and appliances to reduce water demand.
- **MOR Policy 19-4:** Expand the use of water recycling and graywater systems to treat and recycle wastewater and to further reduce water demand related to irrigation of landscaped areas.

Land Use Element (2019)

The following proposed strategies and policies in the 2019 Land Use Element are applicable to the analysis of utilities and would:

- **LU Policy 1-3:** Require sustainable design strategies to be integrated into public and private development projects.
- **LU Policy 1-6:** Require that new building construction incorporate solar panels, vegetated surface, high albedo surface and/or similar roof structures to reduce net energy usage and reduce the heat island effect.
- **LU Policy 2-1:** Promote the establishment of local green energy generation projects along with the infrastructure to support such projects.
- **LU Policy 3-1:** Implement land use regulations and economic development strategies that will help diversify the local economy and expand job growth. Accommodate a mix of industries in Long Beach, including high technology, telecommunications, aerospace, green technology, renewable energy, healthcare, higher education, manufacturing, port and shipping, professional services, restaurants, entertainment and the film industry.

Strategy No. 17: Improve public infrastructure to serve new development, established neighborhoods, commercial centers, and industry and regional-serving facilities.

- **LU Policy 17-1:** Coordinate land use development and infrastructure investment.
- **LU Policy 17-2:** Maintain adequate and sustainable infrastructure systems to protect the health and safety of all City residents, businesses, institutions, and regional-serving facilities.
- **LU Policy 20-9:** Recycle or beneficially reuse a majority and growing proportion of the City's wastewater supply.
- **LU Policy 20-10**: Seek to supply a majority and growing proportion of the City's water for both domestic and non-potable demand through use of reclaimed and recharged groundwater sources by 2030.
- **LU Policy 20-11**: Coordinate with other agencies to reduce stormwater runoff by capturing runoff for groundwater recharge, irrigation, and recycling purposes.

Urban Design Element (2019)

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

- **UD Policy 1-2:** Focus development and supporting infrastructure improvements within targeted Areas of Change identified within the Land Use Element.

Strategy No. 5: Integrate healthy living and sustainable design practices and opportunities throughout Long Beach.

- **Policy UD 5-5:** Accommodate space for the use of rooftop solar panels and other forms of renewable energy on buildings, underutilized sites, utility plants, and parking facilities through a simplified permitting process, wherever feasible.

Strategy No. 6: Improve public infrastructure to serve new development, established neighborhoods, commercial centers, and industry and regional-serving facilities within areas of change and future growth areas.

- **UD Policy 6-1:** Prioritize improvements to remedying infrastructure, public facilities, and service deficiencies to underserved neighborhoods and business hubs.
- **UD Policy 6-3:** Maintain adequate and sustainable infrastructure systems to protect and enhance the health and safety of all City residents, businesses, institutions, and regional-serving facilities.
- **UD Policy 6-4:** Promote sustainability through the use of new technologies and green infrastructure systems and equipment. Prioritize areas to retrofit with green infrastructure, Low Impact Development, and Stormwater BMPs.
- **UD Policy 31-7:** Ensure that landscaping for new projects complies with Title 23, Chapter 2.7 of the California Code of Regulations, Model for Water Efficient Landscape Ordinance.
- **UD Policy 31-8:** Incorporate water conservation methods, such as regular adjustment of irrigation controllers, irrigation scheduling based on plant water needs, preventing overspray, water-efficient landscape designs using low water-use plants, efficient irrigation systems, minimizing turf areas, soil improvement and mulch, watering during early or late hours, and water budgeting using Water Use Classification of Landscape Species (WUCOLS) to reduce the amount of water used in a landscape.

Strategy No. 39: Beautify the City with trees and landscaping while being conscious of water resources and utilizing sustainable practices.

- **UD Policy 39-4:** Ensure that landscaping for new projects complies with Title 23, Chapter 2.7 of the California Code of Regulations, Model for Efficient Landscape Ordinance.

- **UD Policy 39-5:** Integrate native, drought-tolerant, or low-water-use plant species in streetscapes and design for ease of maintenance to assure their longevity and limit water and resource use.
- **UD Policy 39-7:** Consider providing bioswales, pervious strips, flow-through planters, and pervious pavement to help infiltrate stormwater runoff before it enters the sewer system.

Land Use Element (1989)

The City's General Plan Land Use Element (1989) was updated in 2019. At time the Notice of Preparation (NOP) for this PEIR/PEIS was published and circulated for review (September 12, 2018), the 1989 General Plan Land Use Element was in effect. Subsequent to the NOP, the 2019 General Plan Land Use Element was approved by City Council on December 3, 2019. The following is the specified objectives from the 1989 Land Use Element that are related to water.

Objective: Long Beach will continue to take actions that are necessary to preserve and adequate supply of water for domestic, commercial, and industrial purposes.

Sustainable City Action Plan

The City adopted the Sustainable City Action Plan on February 2, 2010, with the purpose of moving the City towards becoming a more sustainable City. Sustainability is defined in this plan as maximizing individual benefits and minimizing negative environmental impacts, to ensure the long-term health of the environment, for the enjoyment and use of current and future generations. The Sustainable City Action Plan includes initiatives, goals, and actions that are meant to guide City decision-makers in striving towards achieving a sustainable City. The following goals, initiatives, and actions are applicable to the Proposed Project:

Waste Reduction Goal 1: Annual reduction in average pounds of solid waste generated per person per day.

Waste Reduction Initiative 1: Increase diversion by reducing waste and increasing recycling and reuse.

Water Goal 1: Reduce per capita use of potable water, exceeding the State mandate to achieve a demand reduction of 20% in per capita water use by the year 2020.

Water Initiative 1: Ensure a sustainable water supply through conservation and reduced dependence on its imported water.

Water Initiative 2: Implement low impact development strategies to reduce runoff and pollution at the source and increase the beneficial use of rainwater.

City of Long Beach Municipal Code

Chapter 18.76, Water Submeters, of the Long Beach Municipal Code, establishes the City's intent to conserve water and to ensure sufficient water resources are available to current and future City residents. Specifically, this chapter of the Long Beach Municipal Code encourages water conservation in multi-family residential and mixed-use building, by requiring the installation of water submeters at individual units to assist building owners in allocating water costs per unit, thereby incentivizing residents to conserve water.

Section 18.67.070 (Compliance with Waste Management Program) requires any demolition project of "any valuation" to submit documentation that the project has met diversion requirements. Specifically, the City requires 60% of the waste tonnage of construction or demolition debris to be recycled, reused, or diverted from landfills or disposal sites.

3.13.3 Thresholds of Significance

The following significance criteria are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.), and will be used to determine the significance of potential utilities and service systems impacts. Since the release of the IS (September 2018), updates to the CEQA Guidelines have gone into effect. One of the revisions involves slight changes to the threshold questions related to utilities and service systems. As such, the threshold questions listed here do not match the IS and includes analysis related to electric power, natural gas, and telecommunications facilities. Impacts related to utilities and service systems would be significant if the Proposed Project would:

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.

B. Not have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.

C. Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

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.

E. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

The IS (Appendix A-1) found that the Proposed Project would have less than significant impacts as it relates to compliance with solid waste disposal-related statutes and regulations, because future developments would be required to comply with existing and future statutes and regulations mandated by the City, State, or federal law. Therefore, impacts related to compliance with federal, State, and local statutes and regulations related to solid waste are not further discussed in this Draft PEIR/PEIS.

3.13.4 Impacts Analysis

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?

Water Facilities

The Proposed Project does not include any physical improvements but would facilitate future development that would have the potential to create a need for new or expanded water facilities within the City.

Construction activities associated with future projects facilitated by approval of the GCSP would not increase the demand for water mains or conveyance facilities.

Future development facilitated by the Proposed Project could result in the need for new or relocated water mains or conveyance facilities. The Proposed Project would connect to municipal water services, which are operated and maintained by the LBWD. Future water lines intended to service the Plan Area would likely connect into the larger 20- to 36-inch transmission water mains located along Cherry Avenue, Wardlow Road, Saint Louis Avenue, and 32nd Street. Installation of new water mains and laterals consists of either trenching to the depth of pipe placement or using a variety of different trenchless technology, which causes substantially less ground disturbance. Trenching results in a temporary stockpiling of soil along the length of the trench, pending backfilling, which could result in potential short-term erosion induced siltation of nearby waterways. Trenchless technology only requires temporary stockpiling of soil adjacent to excavations on both ends of long sections of pipe.

New development would require connections to existing water mains within the Plan Area. While no physical improvements or development are proposed at this time, the GCSP would facilitate development that could exceed water main capacity in the future. As such, water main segments in the plan area may require replacement, depending on the configuration of land uses at buildout of the Plan Area. Replacement of the aforementioned water mains, if required, would occur within existing roadways in soil already disturbed by construction of the roadways and existing utilities.

Mitigation measure **MM-UTIL-1** requires future development and/or redevelopment projects under the GCSP to have a site-specific and project-specific utilities report at the time of project entitlements. This mitigation measure would also require obtaining "will serve" letters from all applicable utility providers, which includes the Long Beach Water Department for potable water services.

Under implementation of the GCSP, it is also anticipated that the majority of existing on-site water lines within private parcels would be removed and replaced with new water lines based on the proposed building configuration and type of development proposed for each parcel. The new water lines would be implemented as needed to better serve the individual development projects that would be accommodated by the GCSP. Additionally, it is anticipated that routine maintenance and replacement of older water lines within the City's right-of-way will continue throughout the Plan Area consistent with the Capital Improvement Program established by the Long Beach Water Department; all activities associated with routine maintenance and replacement of older water lines would be initiated and undertaken by the City, as needed.

Furthermore, future water infrastructure improvements may be subject to further environmental review depending on the extent and nature of those improvements. With incorporation of mitigation measure **MM-UTIL-1**, which requires project-specific evaluation of existing water distribution systems, impacts would be less than significant.

CEQA Impact Determination

Potential impacts to existing water distribution systems would be potentially significant if the expansion of existing infrastructure would result in additional significant impacts. Mitigation measure **MM-UTIL-1** would require project-specific analyses to determine if future projects can be served by the existing infrastructure. If required improvements are identified by the Long Beach Water Department to serve the site, the project applicant shall fund such improvements. No further mitigation is required. As such, impacts to water facilities is considered **less than significant with mitigation incorporated** under CEQA. (see Section 3.6, Hydrology and Water Quality, of this Draft PEIR/PEIS).

NEPA Impact Determination

Potential impacts to existing water distribution systems would be potentially significant if the expansion of existing infrastructure would result in additional significant impacts. Mitigation measure **MM-UTIL-1** would require project-specific analyses to determine if future projects can be served by the existing infrastructure. If required improvements are identified by the Long Beach Water Department to serve the site, the project applicant shall fund such improvements. No further mitigation is required. As such, there would be **no adverse effects** to water facilities under NEPA.

Wastewater Treatment Facilities

As discussed under threshold d, below, there is sufficient wastewater treatment capacity within the LACSD facilities to accommodate the increase in wastewater demand City-wide, and no major improvements are required. The increase in wastewater flows associated with the Proposed Project would not exceed the treatment requirements of the Los Angeles RWQCB, for the Joint Water Pollution Control Plant and Long Beach Water Reclamation Plan.

Wastewater Infrastructure (Sanitary Sewer)

The Proposed Project does not include any physical improvements but would facilitate future development that would have the potential to create a need for new or expanded wastewater infrastructure, such as sanitary sewers, within the City.

Future development facilitated by the Proposed Project could result in the need for new or relocated wastewater infrastructure facilities. The wastewater infrastructure for the immediate Plan Area primarily consists of vitrified clay pipe. The LACSD owns, operates, and maintains the large trunk sewers that form the backbone of the regional wastewater conveyance system. Local collector and/or lateral sewer lines in the City of Long Beach are the responsibility of the City. No deficiencies exist in LACSD facilities that serve the City (LACSD 2018a). The LACSD would review individual developments within the Plan Area in order to determine whether or not sufficient trunk sewer capacity exists to serve each project and whether LACSD facilities would be affected by each project. The LACSD is empowered by the California Health and Safety Code to charge a fee for connection (directly or indirectly) to the District's sewerage system. Although the Plan Area is currently receiving sewerage service, any entity increasing the quantity of wastewater discharged due to development projects on parcels already connected to the sewerage system would be required to pay a connection fee. In determining the impact to the sewerage system and applicable connection fees, the LACSD Chief Engineer would determine the user category that best represents the actual or anticipated use of the parcel or facilities on the parcel (LACSD 2018a), as is completed in Table 3.13-4, Wastewater Demand – Current and Projected (below).

The addition of new commercial and industrial uses in association with the Proposed Project, including 1) a business park to be located immediately west, southwest, and south of the existing airport runways/taxiways; 2) a community commercial district to be located along the east side of Cherry Avenue; 3) an industrial commercial district also to be located along the east side of Cherry Avenue; and 4) a general industrial area to be located primarily in the southern Plan Area, adjacent to the I-405 freeway, could require increases in the size and change in the location of new sewer mains, pumps, and laterals. Main collection lines would be upgraded to accommodate the increased flow volume. Upgrades to street infrastructure may

also require reconfiguration of wastewater infrastructure. Impacts would generally be confined to street disruptions, as well as potential short-term erosion-related impacts, as described for the installation of new water service lines. It is unlikely that wastewater service would be disrupted for existing customers during installation of new infrastructure.

Mitigation measure **MM-UTIL-1** requires future development and/or redevelopment projects under the GCSP to have a site-specific and project-specific utilities report at the time of project entitlements. This mitigation measure would also require obtaining "will serve" letters from all applicable utility providers, which includes the LACSD and LBWD for wastewater conveyance facilities and sanitary sewers in the plan area.

Furthermore, future wastewater infrastructure improvements may be subject to further environmental review depending on the extent and nature of those improvements. With incorporation of mitigation measure **MM-UTIL-1**, which requires project-specific evaluation of existing wastewater distribution systems, impacts would be less than significant.

CEQA Impact Determination

Potential impacts to existing wastewater distribution systems would be potentially significant if the expansion of existing infrastructure would result in additional significant impacts. Mitigation measure **MM-UTIL-1** would require project-specific analyses to determine if future projects can be served by the existing infrastructure. If required improvements are identified by the LACSD or Long Beach Water Department to serve the site, the project applicant shall fund such improvements. No further mitigation is required. As such, impacts to wastewater treatment facilities is considered **less than significant with mitigation incorporated** under CEQA.

NEPA Impact Determination

Potential impacts to existing wastewater distribution systems would be potentially significant if the expansion of existing infrastructure would result in additional significant impacts. Mitigation measure **MM-UTIL-1** would require project-specific analyses to determine if future projects can be served by the existing infrastructure. If required improvements are identified by the LACSD or Long Beach Water Department to serve the site, the project applicant shall fund such improvements. No further mitigation is required. As such, there would be **no adverse effects** to wastewater treatment facilities under NEPA.

Stormwater Drainage

The Proposed Project does not include any physical improvements but would facilitate future development that would have the potential to create a need for new or expanded stormwater drainage facilities within the City.

Construction activities associated with future projects facilitated by approval of the GCSP would be required to comply with all regulatory requirements related to off-site drainage. The Construction General Permit requires the development and implementation of a stormwater pollution prevention plan (SWPPP), which would include and specify water quality BMPs designed to prevent pollutants from contacting stormwater and keep all products of erosion from moving off site into receiving waters. Mitigation measure **MM-HYD-1a** would require compliance with this requirement during construction (refer to Section 3.6, Hydrology and Water Quality, of this PEIR/PEIS). In addition, mitigation measure **MM-HYD-3a** requires the preparation of a hydrology/drainage report to demonstrate that stormwater runoff flow volume and flow rate, associated with specific projects, would be less than or equal to existing conditions to prevent on- and off-site flooding. Project design features shall be identified that would contribute in reducing stormwater runoff.

Future development facilitated by the Proposed Project could result in the need for new or relocated stormwater facilities. With regulatory compliance, the amount of impervious surface and resultant runoff amount as a result of future projects under the GCSP would be reduced in comparison to current conditions, resulting in beneficial impacts related to drainage (Refer to Section 3.6, Hydrology and Water Quality, in this PEIR/PEIS). Regardless, the Proposed Project could require construction of new stormwater mains and drainage to support the Plan Area. Environmental impacts would generally be related to potential short-term erosion-related impacts, as described for the installation of new water service lines.

Mitigation measure **MM-UTIL-1** requires future development and/or redevelopment projects under the GCSP to have a site-specific and project-specific utilities report at the time of project entitlements. This mitigation measure would also require obtaining "will serve" letters from all applicable utility providers, which includes the LACFCD and Long Beach Public Works Department for stormwater drainage facilities.

Furthermore, future stormwater distribution infrastructure improvements may be subject to further environmental review depending on the extent and nature of those improvements. With incorporation of mitigation measure **MM-UTIL-1**, which requires project-specific evaluation of existing stormwater distribution systems, impacts would be less than significant.

CEQA Impact Determination

Potential impacts to existing stormwater drainage facilities would be potentially significant if the expansion of existing infrastructure would result in additional significant impacts. Mitigation measure **MM-UTIL-1** would require project-specific analyses to determine if future projects can be served by the existing infrastructure. If required improvements are identified by the LACFCD and Long Beach Public Works Department to serve the site, the project applicant shall fund such improvements. Mitigation measure **MM-HYD-1a** would ensure that future projects are in compliance with regulatory requirements, which includes site BMPs to reduce runoff. In addition, mitigation measure **MM-HYD-3a** requires the preparation of a hydrology/drainage report to demonstrate that stormwater runoff flow volume and flow rate, associated with specific projects, would be less than or equal to existing conditions to prevent on- and off-site flooding. Potential erosion-related water quality impacts would be potentially significant but mitigable with the implementation of mitigation measures discussed in Section 3.6, Hydrology and Water Quality, of this PEIR/PEIS. No further mitigation is required. As such, impacts to stormwater drainage is considered **less than significant with mitigation incorporated** under CEQA.

NEPA Impact Determination

Potential impacts to existing stormwater drainage facilities would be potentially significant if the expansion of existing infrastructure would result in additional significant impacts. Mitigation measure **MM-UTIL-1** would require project-specific analyses to determine if future projects can be served by the existing infrastructure. If required improvements are identified by the LACFCD and Long Beach Public Works Department to serve the site, the project applicant shall fund such improvements. Mitigation measure **MM-HYD-1a** would ensure that future projects are in compliance with regulatory requirements, which includes site BMPs to reduce runoff. Potential erosion-related water quality impacts would be potentially significant but mitigable with the implementation of mitigation measures discussed in Section 3.6, Hydrology and Water Quality, of this PEIR/PEIS. No further mitigation is required. As such, there would be **no adverse effects** to stormwater drainage under NEPA.

Electric Power, Natural Gas, and Telecommunication

Upgrades would be required associated with new construction, with respect to electric power, natural gas, and telecommunication facilities. Point of connection to the Proposed Project would be submitted to SCE, LBER, Spectrum Communications, Frontier Communications, and AT&T U-verse prior to construction of the proposed development. Upgrades would be confined to the lateral connections to the Plan Area and not any centralized facilities. Upgrades would likely be completed by either trenchless technology

or completion of open trenching, to the depth of the underground utilities. The construction of the laterals would be temporary and would be subject to all applicable regulatory requirements. Environmental impacts would generally be related to potential short-term erosion-related impacts, as described for the installation of new water service lines.

Electric Power

The Proposed Project does not include any physical improvements but would facilitate future development that would have the potential to create a need for new or expanded electrical power infrastructure within the City.

Buildout under the GCSP would create a net increase in electricity demand of compared to existing conditions. Mitigation measure **MM-UTIL-1** requires future development and/or redevelopment projects under the GCSP to have a site-specific and project-specific utilities report at the time of project entitlements. This mitigation measure would also require obtaining "will serve" letters from all applicable utility providers, which includes Southern California Edison for electrical substation capacity and transmission facilities.

In addition, plans submitted for entitlements and/or building permits of development projects that would be accommodated by the GCSP would be required to include verification demonstrating compliance with the current Building and Energy Efficiency Standards and are also required to be reviewed. Development projects that would be accommodated by the GCSP would also be required adhere to the provisions of CALGreen, which established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.

In addition, all discretionary entitlements, including Site Plan Review, require compliance with Section 21.45.400 of the LBMC that establishes green building standards for private and public development found. This section establishes a threshold for LEED compliance based on project type. Compliance with this section also requires incorporating sustainable surface parking lot design to reduce the heat island effect and designing buildings with solar ready roofs.

Furthermore, future electrical infrastructure improvements may be subject to further environmental review depending on the extent and nature of those improvements. With incorporation of mitigation measure **MM-UTIL-1**, which requires project-specific evaluation of existing electrical power facilities, and required green building standards and efficiencies, impacts would be less than significant.

Natural Gas

The Proposed Project does not include any physical improvements but would facilitate future development that would have the potential to create a need for new or expanded natural gas infrastructure, such as sanitary sewers, within the City.

As shown in Table 3.15-4 (see Section 3.15, Energy, of this Draft PEIR/PEIS), the Proposed Project would consume approximately 137,749,891 thousand British thermal units (kBtu) per year. Existing land uses are estimated to consume approximately 28,994,764 kBtu per year. The net change in estimated natural gas consumption between the Proposed Project and Existing is estimated to be 108,755,127 kBtu per year. For disclosure, in comparison, in 2017, SoCalGas delivered approximately 2,957 million therms (295.7 billion kBtu) to Los Angeles County (CEC 2017d). The Proposed Project is subject to statewide mandatory energy requirements as outlined in Title 24, Part 6, of the California Code of Regulations. Title 24, Part 11, contains additional energy measures that are applicable to Proposed Project under CALGreen. Prior to Proposed Project approval, the applicant would ensure that the Proposed Project would meet Title 24 requirements applicable at that time, as required by state regulations through their plan review process. Therefore, due to the inherent increase in efficiency of building code regulations, the Proposed Project, would not require the City to obtain new or expanded natural gas supplies.

Mitigation measure **MM-UTIL-1** requires future development and/or redevelopment projects under the GCSP to have a site-specific and project-specific utilities report at the time of project entitlements. This mitigation measure would also require obtaining "will serve" letters from all applicable utility providers, which includes the LBER for gas demand and distribution facilities in the plan area.

Furthermore, future natural gas infrastructure improvements may be subject to further environmental review depending on the extent and nature of those improvements. With incorporation of mitigation measure **MM-UTIL-1**, which requires project-specific evaluation of existing natural gas facilities, impacts would be less than significant.

Telecommunications

The Proposed Project does not include any physical improvements but would facilitate future development that would have the potential to create a need for new or expanded telecommunications facilities within the City.

Construction activities associated with future projects facilitated by approval of the GCSP would not increase the demand for telecommunications facilities.

Future development facilitated by the Proposed Project could result in the need for new or relocated telecommunications facilities. Similar to existing market conditions, telecommunication utility providers would extend existing services to meet the increased demand for telephone, internet, and cable services as future developments are proposed. Where necessary, infrastructure improvements would be made to existing telecommunications facilities in order to meet customer demands and achieve compliance with the City's goal of investing in telecommunications infrastructure systems. Most telecommunications facilities in the City are currently located within existing right-of-way areas and/or are located underground. As such, environmental impacts associated with future improvements to telecommunications facilities are anticipated to be minimal, as these facility areas would have previously been disturbed through association with past infrastructure improvements.

Mitigation measure **MM-UTIL-1** requires future development and/or redevelopment projects under the GCSP to have a site-specific and project-specific utilities report at the time of project entitlements. This mitigation measure would also require obtaining "will serve" letters from all applicable utility providers, which includes telecommunication providers in the plan area.

Furthermore, future telecommunications infrastructure improvements may be subject to further environmental review depending on the extent and nature of those improvements. With incorporation of mitigation measure **MM-UTIL-1**, which requires project-specific evaluation of existing telecommunication facilities, impacts would be less than significant.

CEQA Impact Determination

Potential impacts to existing electric, natural gas, and telecommunication utilities would be potentially significant if the expansion of existing infrastructure would result in additional significant impacts. Mitigation measure **MM-UTIL-1** would require project-specific analyses to determine if future projects can be served by the existing infrastructure. If required improvements are identified by the respective utility provider to serve the site, the project applicant shall fund such improvements. No further mitigation is required. As such, impacts to electric power, natural gas, and telecommunications is considered **less than significant with mitigation incorporated** under CEQA.

NEPA Impact Determination

Potential impacts to existing electric, natural gas, and telecommunication utilities would be potentially significant if the expansion of existing infrastructure would result in additional significant impacts. Mitigation measure **MM-UTIL-1** would require project-specific analyses to determine if future projects can be served by the existing infrastructure. If required improvements are identified by the respective utility provider to serve the site, the project applicant shall fund

such improvements. No further mitigation is required. As such, there would be **no adverse effects** to electric power, natural gas, and telecommunications under NEPA.

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?

An increase in long-term demand for water is anticipated to occur during operation of future development occurring under the Proposed Project. As required for all new development in California, the Proposed Project would comply with California State law regarding water conservation measures, including pertinent provisions of Title 24 of the California Government Code (Title 24), regarding the use of water-efficient fixtures.

Based on information provided in the 2015 UWMP, LBWD's water supply will increase by 7% from 2015 to 2040 to meet projected water demands (see Table 3.13-3, Current and Projected Water Demand by Sector). The LBWD has adequate supplies to meet projected demands for a single dry-year supply and demand scenario, as well as a multiple dry-year supply and demand scenario, throughout the 20-year planning period (through 2040). LBWD water supplies would consist of 36% groundwater, 12% imported water from MWD, 10% desalinated seawater, and 27% through conservation methods (LBWD 2016).

Table 3.13-3
Current and Projected Water Demand by Sector (in acre-feet)

Land Use Type	2015 Usage	2040 Buildout
Single Family Residential	17,778	20,363
Duplex	3,114	3,421
Multi-Family Residential	15,517	20,562
Irrigation	2,187	2,208
Commercial	14,359	16,374
Industrial	219	122
Fire Lines	4	3
Losses	2,028	2,882
Conservation	0	(6,830)
Total	**55,206**	**59,105**

Source: Long Beach Water Department 2016
Note: af = acre-feet per year

As summarized in Table 3.13-3, the 2015 UWMP projects future water demands separately for each land use sector. These projections account for distribution system losses and water conservation measures. The water demand projections in the 2015 UWMP account for the Southern California Association of Governments' (SCAG's) 2012 Regional Transportation Plan population, housing, and employment growth projections, which are slightly higher

than the most current socioeconomic projections included in SCAG's Draft 2016 Regional Transportation Plan. The 2015 UWMP includes the higher 2012 projections to err on the side of overestimating growth, and thereby err on the side of overestimating water demand and the need to develop additional water supplies or pursue additional water conservation methods. Because the Proposed Project accommodates growth consistent with SCAG's growth projections (refer to Section 3.7, Land Use and Planning, of this PEIR/PEIS), Proposed Project-related growth and its associated water demand has been accounted for in the 2040 scenario identified in the 2015 UWMP.

UWMPs are essential documents by which cities and counties determine their water supplies, consistent with general plan updates. The accuracy and usefulness of UWMPs allow for cities and counties to determine the water demand for a proposed development by determining whether or not the project was included as part of the projected water demand of the current UWMP, which accounts for growth projections outlined in a city or county General Plan. Consequently, the water demand does not need to be separately evaluated, provided the project is consistent with the UWMP and General Plan. Because the Proposed Project has been determined to be consistent with water demands in the 2015 UWMP and because LBWD has identified a surplus water supply to serve the projected demands through 2040, the Proposed Project-related demand for water would be consistent with the City's UWMP.

CEQA Impact Determination

The Proposed Project would have sufficient water supplies available to serve buildout of the Plan Area and reasonably foreseeable future development during normal, dry, and multiple dry years. Impacts related to water demand would be **less than significant** and no mitigation is required.

NEPA Impact Determination

The Proposed Project would have sufficient water supplies available to serve buildout of the Plan Area and reasonably foreseeable future development during normal, dry, and multiple dry years. There would be **no adverse effects** related to water demand.

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

Wastewater generated in the City is treated by the LACSD. As previously discussed, the majority of the wastewater generated in the City is delivered to the Joint Water Pollution Control Plant of LACSD, with the remaining portion delivered to the Long Beach Water

Reclamation Plant of the LACSD. The Joint Water Pollution Control Plant treats approximately 254.7 mgd and has a total permitted design capacity of 400 mgd, whereas the Long Beach WRP treats approximately 9.8 mgd and has a total permitted capacity of 25 mgd.

Based on build out excluding remaining existing uses summarized in Table 3 of Section 2.6.2 (see Chapter 2.0, Project Description, of this Draft PEIR/PEIS), the wastewater demand for Proposed Project land uses, in comparison to existing land uses, has been summarized in Table 3.13-4, Projected Wastewater Demand.

Table 3.13-4
Projected Wastewater Demand (gpd)

Land Use Type	Unit of Measure	Flow (gpd)	Square Feet	Usage (gpd)
Office	1,000 ft^2	200	1,770,554	354,111
Medical Office		200	127,992	25,598
R&D		300	234,651	70,395
Manufacturing		200	1,046,951	209,390
Light Industrial/Warehousing		25	3,120,751	78,019
Retail		100	453,077	45,307
Restaurant		1,000	89,351	89,351
Hotel	1 room	125	162,944[1]	31,335
			Total	**903,507**

Source: Svesson, 2020; LACSD, Table 1. Website: https://www.lacsd.org/civicax/filebank/blobdload.aspx?blobid=3531

[1] For hotel uses, a square footage rate of 650 square feet per room is applied. (Source: deRoos, J. A. (2011). Planning and programming a hotel [https://scholarship.sha.cornell.edu/cgi/viewcontent.cgi?article=1293&context=articles])

gpd = gallons per day
ksf = thousand square feet

The Proposed Project would result in 903,507 gpd or 0.9 mgd. The LACSD facilities serving the Plan Area have a remaining capacity of 160.5 mgd. Therefore, the Proposed Project-related increase in wastewater would represent approximately 0.6% of the remaining capacity of these facilities. As such, there is sufficient wastewater treatment capacity within the LACSD facilities to accommodate the increase in wastewater demand City-wide, and no major improvements are required. The increase in wastewater flows associated with the Proposed Project would not exceed the treatment requirements of the Los Angeles RWQCB, for the Joint Water Pollution Control Plant and Long Beach Water Reclamation Plan.

As indicated in Table 2 of Section 2.7.2 (see Chapter 2.0, Project Description, of this Draft PEIR/PEIS), the development potential (i.e., total square feet) based on the 10- and 20-year market projections, which were prepared at the outset of the planning process, are generally similar to the development potential provided in Table 3.13-4.

Therefore, the Proposed Project-related increase in wastewater under the 10- and 20-year market projections would similarly represent a small percentage of the remaining capacity of the LACSD treatment facilities.

CEQA Impact Determination

The Proposed Project would result in a determination by the LACSD that it has adequate capacity to serve the Proposed Project's projected demand, in addition to the LACSD's existing commitments. Impacts would be **less than significant,** and no mitigation is required under CEQA.

NEPA Impact Determination

The Proposed Project would result in a determination by the LACSD that it has adequate capacity to serve the Proposed Project's projected demand, in addition to the LACSD's existing commitments. As such, there would be **no adverse effects** under NEPA.

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?

Construction

As indicated in Table 1 of Section 2.4.2 (see Chapter 2.0, Project Description, of this Draft PEIR/PEIS), the Proposed Project would result in 9,683,778 square feet of development, respectively. Future projects would be reviewed by the City on a project-by-project basis and would comply with any requirements in effect when the review is conducted.

Construction of future projects facilitated by the Proposed Project would generate demolition waste; however, such debris would be accommodated by the County's existing landfills, with a large majority of the City's solid waste being disposed of at the SERRF. In addition, construction waste would be recycled to the extent feasible, pursuant to Chapter 18.67, Construction and Demolition Recycling Program, of the Long Beach Municipal Code. Under the Long Beach Municipal Code, covered projects requiring demolition or building permits are required to divert at least 60% of all Proposed Project-related construction and demolition material from landfills. Compliance with this chapter of the Long Beach Municipal Code would be a condition of approval on any construction or demolition permit issued for a covered project.

CEQA Impact Determination

The Proposed Project would have a **less than significant impact** related to solid waste generation during construction under CEQA, and no mitigation measures regarding demolition/construction debris are required.

NEPA Impact Determination

The Proposed Project would have **no adverse effects** related to solid waste generation during construction under NEPA, and no mitigation measures regarding demolition/ construction debris are required.

Operations

With respect to Proposed Project operations, the City's Environmental Services Bureau provides solid waste collection services to collect and dispose of the solid waste/refuse generated by the City. Solid waste generated in the City is also transported to LACSD facilities when solid waste is not suitable for processing at the SERRF, which currently processes approximately 1,345 tons per day. Remaining capacity and estimated closure dates are not determined because the SERRF is a transformation facility that never reaches capacity, as it continually converts solid waste to energy and ash. In 2012, approximately 203,040 tons, or 47 percent, of the solid waste disposed of by the Long Beach residents and businesses were disposed of at the SERRF. Solid waste considered not suitable for processing at the SERRF and generated in the City is taken to landfills in Orange, San Bernardino, and Riverside counties (see Table 3.13-2, Capacity of Landfills Serving the City of Long Beach [2012]) (Los Angeles County 2017; City of Long Beach 2017, 2019b; LACSD 2018b).

Table 3.13-5, Solid Waste Demand – Current and Projected, includes solid waste demand projections in the City through 2040. In 2012, 260,964 tons per year of solid waste was disposed in the City. The City is forecast to generate approximately 1.6 million more pounds of solid waste by 2040, or an increase of approximately 133,342 pounds per day. As shown in Table 3.13-2, Capacity of Landfills Serving the City of Long Beach (2012), the solid waste facilities accepting the remaining solid waste generated from the City that is not treated at the SERRF have a combined remaining capacity of approximately 833.7 million cubic yards and closure dates as late as 2045. Therefore, there is sufficient landfill capacity in the region to serve solid waste generated by the Proposed Project. Furthermore, future development under the Proposed Project would also include efficient waste management procedures to reduce the amount of solid waste generated in the planning area.

CEQA Impact Determination

For the reasons described above, Proposed Project operations would not 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 (e.g., County Integrated Waste Management Plan). Impacts would be **less than significant** under CEQA, and no mitigation is required.

NEPA Impact Determination

For the reasons described above, Proposed Project operations would not 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 (e.g., County Integrated Waste Management Plan). As such, there would be **no adverse effects** under NEPA.

Table 3.13-5
Solid Waste Demand – Current and Projected (lbs/day)

Land Use Type	Unit Type	Usage Factor	2012 Usage (lbs/day)	2040 Buildout (lbs/day)	2012 Usage (lbs/day)	2040 Buildout (lbs/day)	Project-related Increase (lbs/day)
Single Family[1]	lbs/unit/day	10	63,934	64,598	639,340	645,980	6,640
Multi Family[2]	lbs/unit/day	4	99,860	110,940	399,440	443,760	44,320
Commercial/Retail[3]	lbs/1,000 sf/day	5	21,015,600	24,484,100	105,078	122,421	17,343
Office[4]	lbs/1,000 sf/day	6	7,984,400	8,977,500	47,906	53,865	5,959
Industrial[5]	lbs/1,000 sf/day	5	17,571,000	25,240,600	87,855	126,203	38,348
Public Facilities/Institutional[6]	lbs/sf/day	0.007	21,474,000	24,435,800	150,318	171,051	20,733
Total	**-**	**-**	**-**	**-**	**1,429,937**	**1,563,279**	**133,342**

Source: CalRecycle, Estimated Solid Waste Generation and Disposal Rates (2016)
1 County of Los Angeles Dept. of Regional Planning, Vesting Tentative Tract No. 47905, etc. (August 1992)
2 County of Los Angeles Dept. of Regional Planning, Vesting Tentative Tract No. 47905, etc. (August 1992)
3 County of Los Angeles Dept. of Regional Planning, Vesting Tentative Tract No. 47905, etc. (August 1992)
4 Stevenson Ranch Draft EIR (Phase IV), Los Angeles County (April 1992)
5 Stevenson Ranch Draft EIR (Phase IV), Los Angeles County (April 1992)
6 Draft EIR for the Central Commercial Redevelopment Project (Monterey Park Redevelopment Agency) (1992)
lbs/day = pounds per day
lbs/unit/day = pounds per unit per day
lbs/1,000 sf/day = pounds per thousand square feet per day
lbs/sf/day = pounds per square feet per day

3.13.5 Cumulative Impacts

As defined in the State CEQA Guidelines, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, present, current, and probable future projects within the cumulative impact area for utilities. The planning area associated with cumulative impacts includes the entire 50 square miles within the limits of the City of Long Beach. Therefore, the cumulative area for utilities is listed below for each individual utility provider.

Water. The geographic area for the cumulative analysis of water infrastructure includes the service territory of the LBWD. According to the City's 2015 Regional UWMP, the MWDSC's future water supplies are reliable, because the MWDSC current allocation plan guarantees an amount of water close to the LBWD's need for water, and because the LBWD has a preferential right to the MWDSC supplies in excess of its need for that water. In addition, LBWD, which provides the groundwater supply to the City, projects that there are sufficient groundwater supplies to meet any future demand requirements in the City. Further, the current 2015 UWMP accounts for the Proposed Project's transition from traditional land uses and has demonstrated the LBWD has the ability to serve the project-related increase in water demand through the year 2040.

While the MWDSC would accommodate the Proposed Project-related demand for water, the Southern California region is currently facing a challenge in securing its firm water supplies. Due to increased environmental regulations and competition for water from outside of the region, Southern California has seen a reduced supply of imported water. Furthermore, continued population and economic growth has resulted in increased water demands, which have affected water delivery reliability and water availability.

MWDSC's 2010 Regional UWMP describes its water availability and identifies future water supplies to meet the region's long-term water demand. The 2010 Regional UWMP also identifies supply capacities from 2015 through 2035 under single dry-year, multiple dry-year, and average year hydrologic conditions. The 2010 Regional UWMP indicates that the region can provide reliable water supplies under both normal conditions and under the single-driest-year and multiple-dry-year scenarios. While the 2010 Regional UWMP has identified long-term water supplies to serve the region, the MWDSC has prepared for the possibility of being unable to meet the water demands of its member agencies. The MWDSC has established the Water Supply Allocation Plan (WSAP), which calculates each member agency's supply allocations and key implementation elements required for administering the allocation. The WSAP also considers how the MWDSC would be able to provide water to its member agencies during a catastrophic interruption in water supplies.

Mitigation measure **MM-UTIL-1** would require project-specific analyses to determine if future projects can be served by the existing infrastructure. If required improvements are identified by the Long Beach Water Department to serve the site, the project applicant shall fund such improvements.

These improvements would be completed on a project-level and carried out consistent with relevant planning documents for the subject utility.

Similar to that described for sewer lines, installation of new water mains and laterals could result in potential short-term erosion induced siltation of nearby waterways. Potential cumulative erosion related water quality impacts would be potentially significant but mitigable with the implementation of mitigation measure No further mitigation is required. Cumulative impacts to water are considered **less than significant with mitigation incorporated**.

Wastewater. The geographic area for the cumulative analysis for wastewater treatment is defined as the City and LACSD. Within its service area, LACSD uses United States Census Bureau population information with population projections, as well as existing land use and build out or zoned land use to project current and future wastewater flows. The City is almost entirely built out, with most new development occurring as in-fill projects. While the Proposed Project does not include physical improvements, the future build out permitted by the GCSP is not anticipated to generate wastewater above LACSD's current capacity. The Proposed Project would result in a population consistent with the growth projections for the City provided in the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy. Further, with consideration of projected City growth, it is anticipated that LACSD's existing and planned wastewater treatment capacity would be sufficient to accommodate the growth forecasted by the United States Census Bureau within its service area, and development that is generally consistent with this forecast can be adequately served by LACSD facilities. Therefore, the Proposed Project's contribution to wastewater generation in the LACSD service area would not be cumulatively considerable.

Mitigation measure **MM-UTIL-1** would require project-specific analyses to determine if future projects can be served by the existing infrastructure. If required improvements are identified by the LACSD and Long Beach Public Works Department to serve the site, the project applicant shall fund such improvements. These improvements would be completed on a project-level and carried out consistent with relevant planning documents for the subject utility.

Installation of new sewer mains and laterals consists of either trenching to the depth of pipe placement or using a variety of different trenchless technology, which causes substantially less ground disturbance. Trenching results in a temporary stockpiling of soil along the length of the trench, pending backfilling, which could result in potential short-term erosion induced siltation of nearby waterways. Trenchless technology only requires temporary stockpiling of soil adjacent to excavations on both ends of long sections of pipe. Cumulative impacts related to wastewater generation would be **less than significant** and no mitigation is required. No further mitigation is required. Cumulative impacts to wastewater are considered **less than significant with mitigation incorporated**.

Stormwater. The geographic area for the cumulative analysis of water infrastructure includes the service territory of the City and LACFCD. Mitigation measure **MM-UTIL-1** would require project-specific analyses to determine if future projects can be served by the existing infrastructure. If required improvements are identified by the LACFD and Long Beach Public Works Department to serve the site, the project applicant shall fund such improvements. These improvements would be completed on a project-level and carried out consistent with relevant planning documents for the subject utility.

Potential cumulative construction-related stormwater quality impacts would be potentially significant but mitigable with the implementation of mitigation measure **MM-HYD-1a** (see Section 3.6, Hydrology and Water Quality, of this Draft PEIR/PEIS), in combination with similar mitigation measures implemented at other cumulative project sites. No further mitigation is required. Cumulative impacts to water are considered **less than significant with mitigation incorporated**.

Electric Power, Natural Gas, and Telecommunication. The geographic area for the cumulative analysis of electric power, natural gas, and telecommunication infrastructure includes the service territory for each utility provider.

Mitigation measure **MM-UTIL-1** would require project-specific analyses to determine if future projects can be served by the existing infrastructure. If required improvements are identified by the utility provider to serve the site, the project applicant shall fund such improvements. These improvements would be completed on a project-level and carried out consistent with relevant planning documents for the subject utility. No further mitigation is required. Cumulative impacts to electric power, natural gas, and telecommunication are considered **less than significant with mitigation incorporated**.

Solid Waste. The geographic area for the cumulative analysis of impacts to solid waste disposal capacity is the County of Los Angeles. Development associated with the Proposed Project and other past, present, and reasonably foreseeable projects within the County would contribute to an increase in demand for landfill capacity and solid waste services for the County. As stated previously, the SERRF, a refuse-to-energy transformation facility, serves the planning area and does not have a scheduled closure date. Remaining capacity and estimated closure dates for the SERRF are not determined because the facility is a transformation facility that that never reaches capacity, as it continually converts solid waste to energy and ash. The SERRF currently does not exceed its daily maximum permitted disposal capacity. Solid waste considered unprocessable by SERRF would be taken to landfills in Orange, San Bernardino, and Riverside Counties. There is currently sufficient permitted capacity within the LACSD system serving Los Angeles County to provide adequate future capacity for the County's solid waste needs. The City currently complies with all federal, State, and local statutes and regulations related to solid waste. Therefore, the Proposed Project would not have a significant cumulative impact on waste disposal capacity at

LACSD facilities. Cumulative impacts related to solid waste generation would be **less than significant**, and no mitigation is required.

3.13.6 Mitigation Measures

In the absence of significant impacts, the following mitigation measure **MM-UTIL-1** has been identified for utilities and service systems.

In addition to the mitigation measure identified below, impacts implementation of mitigation measure **MM-HYD-1a** (see Section 3.6, Hydrology and Water Quality, of this Draft PEIR/PEIS) would ensure that BMPs are incorporated during construction and operation of project-specific design documents. These measures also ensure compliance with regulatory requirements for runoff. In addition, mitigation measure **MM-HYD-3a** requires the preparation of a hydrology/drainage report to demonstrate that stormwater runoff flow volume and flow rate, associated with specific projects, would be less than or equal to existing conditions to prevent on- and off-site flooding. Project design features shall be identified that would contribute in reducing stormwater runoff.

MM-UTIL-1 Prior to the issuance of project entitlements or grading permits, whichever comes first, for individual development or redevelopment projects under the Globemaster Corridor Specific Plan (GCSP), a utilities report shall be prepared by the Project Applicant that will identify the ability for existing utility infrastructure to serve the project. As part of this report, the project applicant shall provide evidence to the City of Long Beach Development Services Department that that the development project has been reviewed by the applicable utility provider and that a "Will Serve" letter has been issued. The "Will Serve" letter process is necessary in order to determine whether or not sufficient capacity exists to serve each development project and if the existing utility facilities will be affected by the development project. The report shall include, but not be limited to, the following analyses:

Water Infrastructure

1. The report shall analyze the existing water main conditions and estimates the project-specific water demand for future development. Any development or redevelopment project that would impact existing water facilities within the Plan Area, for which improvements and/or relocation are required or have been identified, shall fund the improvements those as prescribed by City of Long Beach Water Department.

Stormwater/Storm Drain Infrastructure

2. A Hydrology/Hydraulics report shall be prepared that estimates the site-specific discharge rates for a future development. The hydrology and hydraulic study shall analyze the on-site and immediate off-site storm drain systems to determine capacity and integrity of the existing systems. The Project Applicant shall request the "allowable discharge rate" – which limits peak flow discharges as compared to existing conditions based on regional flood control constraints – from the Los Angeles County Department of Public Works and shall comply with such discharge rate. This report can be completed in conjunction with the Hydrology/Drainage Report required under mitigation measure **MM-HYD-3a**. Any development or redevelopment project that would impact segments of the existing storm drain facilities within the Plan Area, for which improvements are required, shall fund upsizing of those storm drain segments as prescribed by City of Long Beach Public Works Department and Los Angeles County Flood Control District.

Wastewater/Sewer Infrastructure

3. The report shall analyze the existing sewer main conditions and estimates the project-specific wastewater generation for future development. Any development or redevelopment project that would impact existing sewer facilities within the Plan Area, for which improvements and/or relocation are required or have been identified, shall fund the improvements those as prescribed by Los Angeles County Sanitation District and Long Beach Water Department.

Electrical Infrastructure

4. The report shall analyze the existing electrical capacity and estimate the project-specific electrical demand for future development. Any development or redevelopment project that would impact existing electrical loads or require new electrical substations or facilities within the Plan Area, for which improvements and/or relocation are required or have been identified, shall fund the improvements those as prescribed by Southern California Edison.

Natural Gas

5. The report shall analyze the existing gas pipeline capacity and estimate the project-specific natural gas demand for future development. Any development or redevelopment project that would impact existing natural gas facilities or require new infrastructure within the Plan Area, for which improvements and/or

relocation are required or have been identified, shall fund the improvements those as prescribed Long Beach Energy Resources Department.

3.13.7 Significance After Mitigation

With the implementation of mitigation measures **MM-UTIL-1**, **MM-HYD-1a**, and **MM-HYD-3a**, all potential impacts related to utilities and service systems would remain **less than significant**.

3.13.8 References

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3.14 ENVIRONMENTAL JUSTICE

This section identifies the potential environmental justice issues associated with the Globemaster Corridor Specific Plan (GCSP; Proposed Project) site and vicinity, identifies associated regulatory requirements, and analyzes the Proposed Project's impacts to environmental justice. The following discussion focuses on the existing environmental justice issues in the City of Long Beach (City) and more specifically, the Plan Area.

The Initial Study (IS) and Notice of Preparation (NOP) are contained in Appendix A-1, Initial Study; and Appendix A-2, Notice of Preparation, respectively. No comments regarding environmental justice were received in response to the NOP (see Appendix A-3, Notice of Preparation Comment Letters).

CEQA does not require analysis of environmental justice, nor does it have specific thresholds of significance for environmental justice. As such, this section relies on NEPA requirements for identification of any potential environmental justice effects.

3.14.1 Existing Conditions

Definitions

The U.S. Environmental Protection Agency (EPA) defines environmental justice as:

> "The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies" (EPA 1999).

The first step of an environmental justice analysis includes identifying areas where a minority or low-income population exists within the area that would be potentially impacted by the GCSP. The impact area of analysis includes off-site areas that would be impacted from noise, air quality, and transportation/traffic. The following section identifies the existing demographic conditions and the affected populations and communities within and adjacent to the GCSP.

The document *Environmental Justice Guidance Under the National Environmental Policy Act* (CEQ 1997) defined the terms minority and low-income to include:

- **A minority** is defined as individual(s) who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of

Hispanic origin; or Hispanic. However, individuals of Hispanic background can also identify themselves as any racial group because Hispanic is an ethnicity based on a shared language, Spanish—not a racial identity.

Low-income populations in an affected area are identified with the annual poverty thresholds from the U.S. Census Bureaus' *Current Population Reports, Series P-60 on Income and Poverty* (CEQ 1997). The *Current Population Reports, Series P-60 on Income and Poverty* is an annual report prepared by the U.S. Census Bureau. The most recent report was published in 2016 (Proctor et al. 2016). The report, among other data, identifies income levels for individuals and different-sized families, and if the individual or family earns below that level, they are considered in poverty. The CEQ identifies that these poverty thresholds should be used to define low-income populations.

Minority and Low-Income Populations

Information on existing population and socioeconomic conditions is based primarily on data published by the U.S. Census Bureau. The U.S. Census Bureau compiles data by county, city, and census tract. A census tract is a permanent geographic area, typically smaller than a city or county, recognized by the U.S. Census Bureau, to allow the collection and analysis of census data at a more refined geographic scale. Once established, census tract boundaries are rarely changed to support the comparison of census data collected in each tract over time.

City of Long Beach

The total population in the City of Long Beach (City) was 470,489 people in 2017, representing approximately 4.6% of the total population in Los Angeles County (County) (U.S. Census Bureau 2017). The City is home to a lower median household income ($58,314) in comparison to the County ($61,015), and the state of California ($67,169). The City has a minority population that is similar to the County. Table 3.14-1 presents a summary of demographics for the City. California and County demographic data are also included for comparative purposes of the census tracts that comprise the GSCP environmental justice analysis area.

GSCP Environmental Justice Analysis Area

Census tract data was obtained from the Census Bureau for all tracts that cover the Plan Area including the California Heights Neighborhood- the residential area closest to the GCSP that would be potentially affected by noise, air quality, and transportation/traffic impacts from the Proposed Action. California Heights is bound by Bixby Road to the north, Cherry Avenue to the east, Wardlow Road to the south, and Atlantic Avenue to east. As shown in Figure 3.14-1, Census Tracts, the census tracts used for environmental justice analysis include: 9800.18, 5715.04, 5714, 5719, 5720.01, 5734.01, and 5734.02. No demographic data is available for census tract 900.18. The demographic data, including median household income, for census tracts depicted in Figure 3.14-1, are shown in

Table 3.14-1. California Heights is located within census tract 5734.01 and has median household income of $71,944, which is greater in comparison to the City (U.S. Census Bureau).

Table 3.14-1
Globemaster Corridor Specific Plan Area Median Household Income

Location/Census Tract No.	Total Population	Median Household Income	Percentage of Individuals Below the Poverty Level[1]	Percentage Minority Population
California	38,982,847	$67,169	15.1	39.4
Los Angeles County	10,105,722	$61,015	17.0	48.2
Long Beach	470,489	$58,314	19.1	47.5
5715.04	4,804	$64,041	8.3	63.3
5714	4,502	$79,140	3.8	49.1
5719	5,724	$74,453	2.3	36.2
5720.01	5,449	$91,337	6.0	34.7
5734.01	1,329	$71,944	10.3	53.5
5734.02	6,785	$60,421	12.7	48.4

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates
NA = not applicable
1 Low-income populations in an affected area are identified with the annual poverty thresholds from the U.S. Census Bureaus' Current Population Reports, Series P-60 on Income and Poverty
2 A minority is defined as individual(s) who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. However, individuals of Hispanic background can also identify themselves as any racial group because Hispanic is an ethnicity based on a shared language, Spanish—not a racial identity

All of the census tracts within the GCSP environmental justice analysis area have a higher median household income than the City overall, and all but one census tract (5734.02) have a median household income higher than the County. Four of the six census tracts have median household incomes higher than median household income for California. As shown in Table 3.14-1, minority and low-income populations are present within the GSCP environmental justice area of analysis. The percentage of individuals living below poverty level for all six census tracts is lower than the corresponding data for the City, County, and California. Census tracts 5715.04 and 5734.01 have minority populations that are greater than fifty percent of the census tract total population.

3.14.2 Regulatory Setting

Federal

U.S. Executive Order 12898

On February 11, 1994, President Clinton issued an Executive Order (EO) entitled *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. The measure requires Federal agencies to identify and address disproportionately high and adverse human health and environmental effects of Federal programs, policies, and actives on minority and low-income

populations. It requires fair treatment and meaningful involvement of all people, and that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of negative environmental consequences resulting from federal projects (Clinton 1994).

Accompanying EO 12898, was a Presidential Memorandum stating that "each Federal agency shall analyze the environmental effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and low-income communities, when such analysis is required by the National Environmental Policy Act (NEPA) (Clinton 1994).

State

California Environmental Quality Act

California Environmental Quality Act (CEQA) requires state and local agencies to identify the significant environmental impacts of their actions, including potential significant impacts on established communities, and to avoid or mitigate those impacts when feasible. Pursuant to CEQA Guidelines Section 15131(b), economic and social impacts of a project that are not related to physical changes in the environment are not treated as significant impacts on the environment, but may be used to evaluate the significance of physical changes that would be caused by the project.

California Government Code 65040.12(e)

Section 65040.12(e) defines Environmental Justice as "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies." It does not, however, require an analysis of impacts to these populations as part of the CEQA process.

3.14.3 Thresholds of Significance

As identified above, CEQA does not require analysis of environmental justice nor does it have specific thresholds of significance for environmental justice. Therefore, the following environmental justice analysis focuses on NEPA requirements. According to E.O. 12898 and CEQ guidance for implementing environmental justice analysis, a significant effect could occur if the project would:

1. Cause a disproportionately high and adverse human health, economic, social, or environmental impact on a minority population or a low-income population.

Methodology

For the purposes of analysis, minority persons were identified as non-White (Black, Asian American, American Indian and Alaskan Native, Native Hawaiian and Other Pacific Islander) and

Hispanic or Latino (a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race). Low-income populations were defined as those with individuals with household incomes below the Census poverty threshold.

A minority or low-income population is identified using either or both of the following criteria:

1. The census block contains 50%, or more, minority persons and/or the census block group contains 25%, or more, low-income persons.
2. The percentage of minority and/or low-income persons in any census block or block group is more than 10% greater than the county average.

To determine whether impacts would be disproportionately high and adverse on identified minority and low-income populations, the analysis identified the potential for adverse project effects on human health and environmental resources in the study area by reviewing all other sections of this PEIR/PEIS. All effects that were found to be adverse were evaluated to determine the location of the impact and whether those locations were in areas with minority and low-income populations. When minority and low-income populations were identified, the impacts experienced by that population were compared with the affected area and the larger reference community to determine whether the Proposed Project would result in a disproportionately high and adverse impact. A disproportionately high and adverse effect on minority and low-income populations is defined as an impact that:

1. Is predominantly borne by a minority and/or low-income population, or
2. Will be suffered by the minority and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect suffered by the non-minority and/or non-low-income population in the affected area and the reference community.

3.14.4 Impacts Analysis

A. Would the project cause a disproportionately high or adverse human health, economic, social, or environmental impact on a minority population or a low-income population?

The Plan Area and adjacent California Heights neighborhood are considered the areas of potential economic, social, and environmental impacts that could result from implementing the GCSP. The Plan Area is characterized as a developed urban area comprised of commercial, industrial, and residential uses. The closest affected population include residences of the California Heights neighborhood, located adjacent to the west side of Cherry Avenue. Census tract 5734.01, within which California Heights is located, has a median household income higher than the City, County, and California, and has a minority

population greater than fifty percent. The percent minority population of this Census tract 5734.01 (53.5%) is not more than ten percent higher than the County percent minority population (47.5%). Lastly, the median household income is in general higher than comparative geographies, low-income population is lower than comparative geographies, and minority populations are generally similar to comparative geographies. Based on the thresholds above, the populations in census tracts that make up the GSCP environmental justice analysis do not constitute environmental justice populations.

The Proposed Project involves implementation of the GCSP, which serves as a planning and regulatory framework for the development and improvement of the GCSP land use districts and overlay zones. The GCSP is a guidance document for new development, and does not itself propose specific projects. Notably, the GCSP would not be applied to residential areas and would not cause the displacement of any residences. However, as described in Sections 3.1 through 3.13 of this Draft PEIR/PEIS, the development of projects within the GCSP would result in significant and unavoidable impacts associated with air quality, noise and transportation/traffic. For the reasons described in the previous paragraph, the populations within the GCSP environmental justice analysis area do not constitute environmental justice populations. Therefore, environmental impacts resulting from the Proposed Project and discussed throughout this Draft PEIR/PEIS would not disproportionately impact minority or low-income populations.

As discussed in Chapter 2.0, Project Description, of this Draft PEIR/PEIS, the GCSP builds upon the C-17 Transition Master Plan to provide a strategic planning framework for attracting quality industries and improving the character, design, and functionality of the Plan Area. As such, the Proposed Project would not shift nor displace existing business; instead, the Proposed Project seeks to stimulate job growth in response to the nearly 5,000 jobs lost as a result of the C-17 Site closure. In addition, the Proposed Project does not permit any new residential development; thus, the Proposed Project would not result in an increase in population. Therefore, there would be **no adverse effects** associated with environmental justice and disproportionate impacts to minority and low-income populations under NEPA.

3.14.5 Cumulative Impacts

Cumulative impacts are defined in 40 CFR 1508.7 as the incremental impact of an action when added to other past, present, and reasonably foreseeable future examples. For example, when considering a project that will have a permitted discharge to the surrounding surface waters, it may be of concern to populations who rely on subsistence living patterns (i.e., fishing) and already receive public water through lead service lines; the cumulative effects associated with both the discharge and the lead service lines must be taken into account. In such cases, mitigation measures need to be developed and analyzed to reduce an adverse cumulative effect. In addition, minority

populations and low-income populations are often located in areas or environments that may already suffer from prior degradation. Thus, within the cumulative analysis special emphasis should be placed on other sources of environmental stress within the regional, including those that have historically existed, those that currently exist, and those that projected in the future.

As discussed in Section 3.14.4, Impacts Analysis, the Proposed Project would not disproportionately impact minority or low-income population. Environmental impacts resulting from the Proposed Project would result in the same impacts to all population groups within the vicinity of the Plan Area. Additionally, the Proposed Project would not shift nor displace existing business, nor increase population. Thus, the Proposed Project would not place additional environmental stress on populations that may have historically suffered from prior degradation. Therefore, there would be **no adverse cumulative effects** associated with environmental justice and disproportionate impacts to minority and low-income populations under NEPA.

3.14.6 Mitigation Measures

No mitigation measures are required.

3.14.7 Significance After Mitigation

There would be **no adverse effects**.

3.14.8 References

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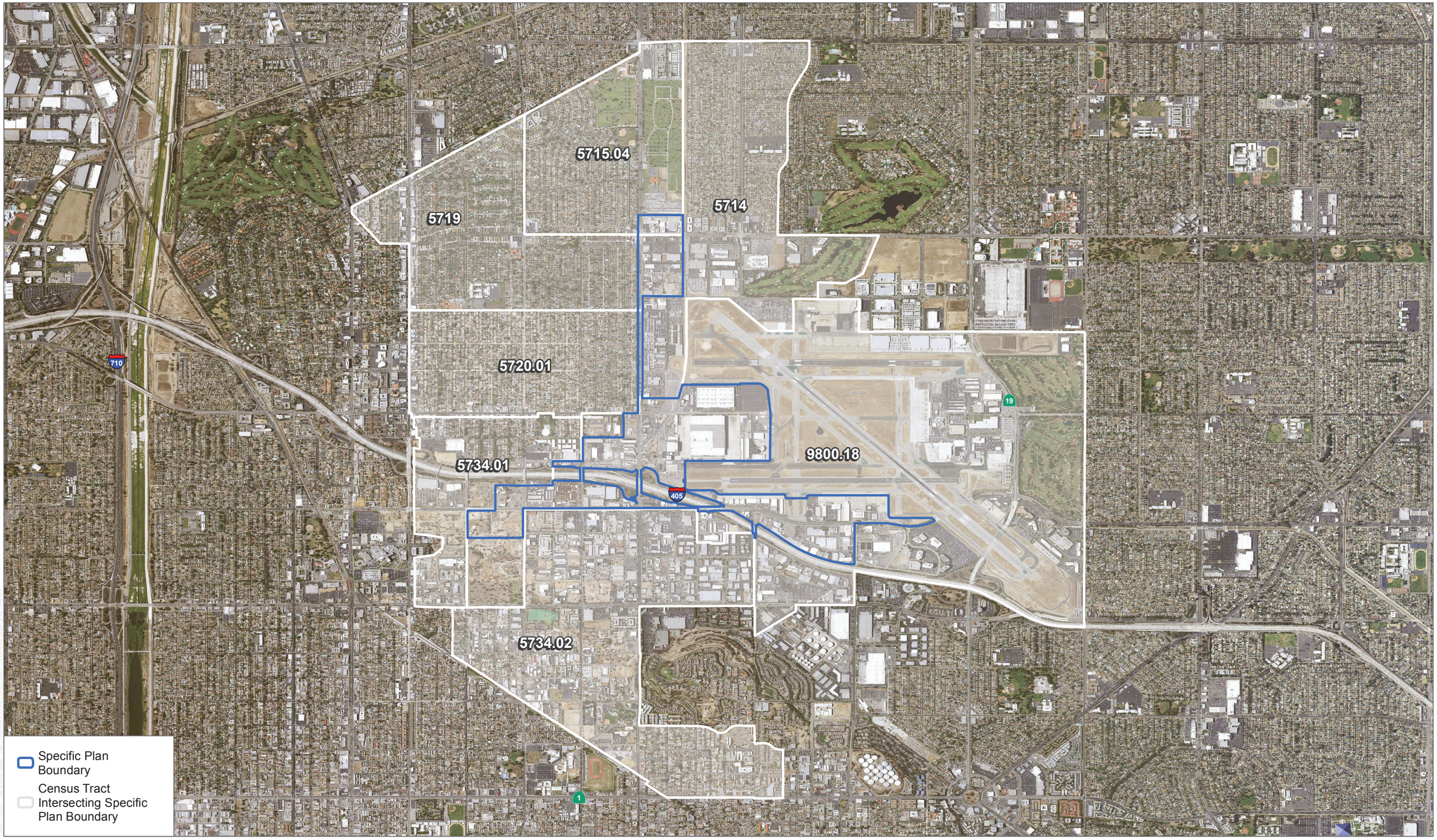

SOURCE: USDA 2017; US Census 2016

DUDEK

0 1,200 2,400 Feet

FIGURE 3.14.1

Census Tracts

Globemaster Corridor Specific Plan Draft PEIR/PEIS

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3.15 ENERGY

This section describes existing setting related to energy, identifies associated regulatory requirements, and evaluates energy impacts related to implementation of the proposed Globemaster Corridor Specific Plan (GCSP; Proposed Project). This analysis is based on emission calculations and California Emissions Estimator Model (CalEEMod) outputs provided as Appendix B-1, Emission Calculations, and additional energy calculation are provided in Appendix E, Energy Calculations.

The Initial Study (IS) and Notice of Preparation (NOP) are contained in Appendix A-1, Initial Study; and Appendix A-2, Notice of Preparation, respectively. No specific comments regarding energy were received during the scoping process. The IS did not evaluate the Proposed Project's potential impacts related to energy (Appendix A-1). As such, all potential energy impacts are addressed in this Draft Program Environmental Impact Report (PEIR)/Draft Program Environmental Impact Statement (PEIS).

3.15.1 Existing Conditions

Electricity

According to the U.S. Energy Information Administration (EIA), California used approximately 255,224 gigawatt hours of electricity in 2018 (EIA 2020a). Electricity usage in California for different land uses varies substantially by the types of uses in a building, type of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building. Due to the state's energy efficiency building standards and efficiency and conservation programs, California's electricity use per capita in the residential sector is lower than any other state except Hawaii (EIA 2020b).

Southern California Edison (SCE) provides electricity to Long Beach residents and businesses, including those located on the Plan Area. SCE, a subsidiary of Edison International, serves approximately 180 cities in 11 counties across central and Southern California. SCE administers various energy efficiency and conservation programs that may be available to residents, businesses, and other organizations in Long Beach. According to the California Public Utilities Commission (CPUC), approximately 84 billion kilowatt-hours (kWh) of electricity were used in SCE's service area in 2017. Demand forecasts anticipate that approximately 75 billion kWh of electricity will be used in SCE's service area in 2020 (CPUC 2018).

The California Renewables Portfolio Standard (RPS) Program establishes a goal for California to increase the amount of electricity generated from renewable energy resources to 20% by 2010 and to 33% by 2020. Recent legislation revised the current RPS target for California to obtain 50% of total retail electricity sales from renewable sources by 2030, with interim targets of 40%

by 2024, and 45% by 2027 (CPUC 2016). SCE receives electric power from a variety of sources. According to SCE's power content label for 2018, 36% of SCE's power came from eligible renewable energy sources in 2017, including biomass/waste, geothermal, small hydroelectric, solar, and wind sources (SCE 2019).

Within Los Angeles County, annual non-residential electricity use is approximately 47 billion kWh per year, while residential electricity use is approximately 21 billion kWh per year, as reported by the state's Energy Consumption Data Management System for 2018 (CEC 2020a).

Natural Gas

According to the EIA, California used approximately 2,136,907 million cubic feet of natural gas in 2018 (EIA 2020c). The majority of California's natural gas customers are residential and small commercial customers (core customers). These customers account for approximately 35% of the natural gas delivered by California utilities (CPUC 2020). Large consumers, such as electric generators and industrial customers (noncore customers), account for approximately 65% of the natural gas delivered by California utilities (CPUC 2020). CPUC regulates California natural gas rates and natural gas services, including in-state transportation over transmission and distribution pipeline systems, storage, procurement, metering, and billing. Most of the natural gas used in California comes from out-of-state natural gas basins. Biogas (e.g., from wastewater treatment facilities or dairy farms) is just beginning to be delivered into the gas utility pipeline systems, and the State has been encouraging its development (CPUC 2020).

Within Los Angeles County, annual non-residential natural gas use is approximately 1,814 million therms per year, while residential natural gas use is approximately 1,108 million therms per year, as reported by the state's Energy Consumption Data Management System for 2018 (CEC 2020b).

The City of Long Beach Energy Resources (LBER) Department purchases natural gas from Southern California Gas Company (SoCalGas) and provides natural gas services to residents and businesses of Long Beach and Signal Hill and portions of surrounding communities, including the cities of Bellflower, Compton, Lakewood, Los Alamitos, Paramount, and Seal Beach. Currently, the LBER Department is the fifth largest municipal gas utility in the nation, serving approximately 500,000 residents and businesses through over 1,900 miles of LBER pipelines. The LBER Department's customer profile is 53% residential and 47% commercial/industrial. The LBER Department's service area was system total throughout was recorded as 8.94 billion cubic feet (bcf) per year in 2018 (California Gas and Electric Utilities 2019) with a future annual demand projected to reach 9.02 bcf per year in 2035 (the furthest horizon year for which data are available) (California Gas and Electric Utilities 2018).

The LBER Department receives a small portion (approximately 5%) of its natural gas supply directly into its pipeline system from local production fields in the planning areas, as well as

offshore facilities. The remainder of LBER's natural gas supplies is purchased from the southwestern United States. The LBER Department also receives intrastate transmission service for purchased gas from SoCalGas.

Petroleum

According to the EIA, California used approximately 681 million barrels of petroleum in 2018, with the majority (584 million barrels) used for the transportation sector (EIA 2020d). This total annual consumption equates to a daily use of approximately 1.9 million barrels of petroleum. There are 42 U.S. gallons in a barrel, so California consumes approximately 78.4 million gallons of petroleum per day, adding up to an annual consumption of 28.7 billion gallons of petroleum. In California, petroleum fuels refined from crude oil are the dominant source of energy for transportation sources. Petroleum usage in California includes petroleum products such as motor gasoline, distillate fuel, liquefied petroleum gases, and jet fuel. California has implemented policies to improve vehicle efficiency and to support use of alternative transportation, which are described in Section 3.15.2, below. As such, the California Energy Commission (CEC) anticipates an overall decrease of gasoline demand in the state over the next decade.

3.15.2 Regulatory Setting

3.15.2.1 Federal

Federal Energy Policy and Conservation Act

In 1975, Congress enacted the Federal Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration is responsible for establishing additional vehicle standards. In 2012, new fuel economy standards for passenger cars and light trucks were approved for model years 2017 through 2021 (77 FR 62624–63200). Fuel economy is determined based on each manufacturer's average fuel economy for the fleet of vehicles available for sale in the United States.

Intermodal Surface Transportation Efficiency Act of 1991

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 promoted the development of intermodal transportation systems to maximize mobility and address national and local interests in air quality and energy. ISTEA contained factors for metropolitan planning organizations to address in developing transportation plans and programs, including some energy-related factors. To meet the new ISTEA requirements, metropolitan planning organizations adopted policies defining the social, economic, energy, and environmental values guiding transportation decisions.

Transportation Equity Act for the 21st Century

The Transportation Equity Act for the 21st Century was signed into law in 1998 and builds on the initiatives established in the ISTEA legislation (previously discussed). The act authorizes highway, highway safety, transit, and other efficient surface transportation programs. The act continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of transportation decisions. The act also provides for investment in research and its application to maximize the performance of the transportation system through, for example, deployment of intelligent transportation systems to help improve operations and management of transportation systems and vehicle safety.

Energy Independence and Security Act of 2007

On December 19, 2007, the Energy Independence and Security Act of 2007 (EISA) was signed into law. In addition to setting increased Corporate Average Fuel Economy standards for motor vehicles, the EISA includes the following other provisions related to energy efficiency:

- Renewable Fuel Standard (RFS) (Section 202)
- Appliance and Lighting Efficiency Standards (Sections 301–325)
- Building Energy Efficiency (Sections 411–441)

This federal legislation requires ever-increasing levels of renewable fuels (the RFS) to replace petroleum (EPA 2017). The U.S. Environmental Protection Agency is responsible for developing and implementing regulations to ensure that transportation fuel sold in the United States contains a minimum volume of renewable fuel. The RFS program regulations were developed in collaboration with refiners, renewable fuel producers, and many other stakeholders.

The RFS program was created under the Energy Policy Act of 2005 and established the first renewable fuel volume mandate in the United States. As required under the act, the original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the EISA, the RFS program was expanded in several key ways that lay the foundation for achieving significant reductions in greenhouse gas (GHG) emissions from the use of renewable fuels, reducing imported petroleum, and encouraging the development and expansion of the renewable fuels sector in the United States. The updated program is referred to as RFS2 and includes the following:

- EISA expanded the RFS program to include diesel, in addition to gasoline.
- EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022.

- EISA established new categories of renewable fuel and set separate volume requirements for each one.
- EISA required the U.S. Environmental Protection Agency to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

Additional provisions of the EISA address energy savings in government and public institutions, research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green" jobs.

3.15.2.2 State

Warren-Alquist Act

The California legislature passed the Warren-Alquist Act in 1974. The Warren-Alquist Act created the CEC. The legislation also incorporated the following three key provisions designed to address the demand side of the energy equation:

- It directed the CEC to formulate and adopt the nation's first energy conservation standards for buildings constructed and appliances sold in California.
- The act removed the responsibility of electricity demand forecasting from the utilities, which had a financial interest in high-demand projections, and transferred it to a more impartial CEC.
- The CEC was directed to embark on an ambitious research and development program, with a particular focus on fostering what were characterized as non-conventional energy sources.

State of California Energy Action Plan

The CEC and CPUC approved the first State of California Energy Action Plan in 2003. The plan established shared goals and specific actions to ensure that adequate, reliable, and reasonably priced electrical power and natural gas supplies are provided, and identified policies, strategies, and actions that are cost-effective and environmentally sound for California's consumers and taxpayers. In 2005, a second Energy Action Plan was adopted by the CEC and CPUC to reflect various policy changes and actions of the prior 2 years.

At the beginning of 2008, the CEC and CPUC determined that it was not necessary or productive to prepare a new energy action plan. This determination was based, in part, on a finding that the state's energy policies have been significantly influenced by the passage of Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006 (discussed below). Rather than produce a new energy action plan, the CEC and CPUC prepared an update that examines the state's ongoing actions in the context of global climate change.

Senate Bills 1078 (2002), 107 (2006), X1-2 (2011), 350 (2015) and 100 (2018)

Senate Bill (SB) 1078 established the California Renewables Portfolio Standard (RPS) Program and required that a retail seller of electricity purchase a specified minimum percentage of electricity generated by eligible renewable energy resources as defined in any given year, culminating in a 20% standard by December 31, 2017. These retail sellers include electrical corporations, community choice aggregators, and electric service providers. The bill relatedly required the CEC to certify eligible renewable energy resources, design and implement an accounting system to verify compliance with the RPS by retail sellers, and allocate and award supplemental energy payments to cover above-market costs of renewable energy.

SB 107 (2006) accelerated the RPS established by SB 1078 by requiring that 20% of electricity retail sales be served by renewable energy resources by 2010 (not 2017). Additionally, SB X1-2 (2011) requires all California utilities to generate 33% of their electricity from eligible renewable energy resources by 2020. Specifically, SB X1-2 sets a three-stage compliance period: by December 31, 2013, 20% had to come from renewables; by December 31, 2016, 25% had to come from renewables; and by December 31, 2020, 33% will come from renewables.

SB 350 (2015) expanded the RPS because it requires retail seller and publicly owned utilities to procure 50% of their electricity from eligible renewable energy resources by 2030, with interim goals of 40% by 2024 and 45% by 2027.

SB 100 (2018) accelerated and expanded the standards set forth in SB 350 by establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030 be secured from qualifying renewable energy sources. SB 100 also states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California. This bill requires that the achievement of 100% zero-carbon electricity resources does not increase the carbon emissions elsewhere in the western grid and that the achievement not be achieved through resource shuffling.

Consequently, utility energy generation from non-renewable resources is expected to be reduced based on implementation of the 60% RPS in 2030. Therefore, any project's reliance on non-renewable energy sources would also be reduced.

Assembly Bill 1007 (2005)

AB 1007 (2005) required the CEC to prepare a statewide plan to increase the use of alternative fuels in California (State Alternative Fuels Plan). The CEC prepared the plan in partnership with the California Air Resources Board (CARB) and in consultation with other state agencies, plus federal and local agencies. The State Alternative Fuels Plan assessed various alternative fuels and

developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Assembly Bill 32 (2006) and Senate Bill 32 (2016)

In 2006, the state legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020. In 2016, the Legislature enacted SB 32, which extended the horizon year of the state's codified GHG reduction planning targets from 2020 to 2030, requiring California to reduce its GHG emissions to 40% below 1990 levels by 2030. In accordance with AB 32 and SB 32, CARB prepares scoping plans to guide the development of statewide policies and regulations for the reduction of GHG emissions. Many of the policy and regulatory concepts identified in the scoping plans focused on increasing energy efficiencies, using renewable resources, and reducing the consumption of petroleum-based fuels (such as gasoline and diesel). As such, the state's GHG emissions reduction planning framework creates co-benefits for energy-related resources. Additional information on AB 32 and SB 32 is provided in Section 3.4, Greenhouse Gas Emissions, of this Draft PEIR/PEIS.

California Building Standards

Part 6 of Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. Part 6 establishes energy efficiency standards for residential and non-residential buildings constructed in California to reduce energy demand and consumption. Part 6 is updated periodically to incorporate and consider new energy efficiency technologies and methodologies.

The current Title 24, Part 6 standards, referred to as the 2019 Title 24 Building Energy Efficiency Standards, became effective on January 1, 2020. In general, single-family residences built to the 2019 standards are anticipated to use approximately 7% less energy (due to energy efficiency measures) than those built to the 2016 standards; if rooftop solar electricity generation is factored in, single-family residences built under the 2019 standards will use approximately 53% less energy than those under the 2016 standards (CEC 2018a). Nonresidential buildings built to the 2019 standards are anticipated to use an estimated 30% less energy than those built to the 2016 standards (CEC 2018a).

Title 24 also includes Part 11, California's Green Building Standards (CALGreen). CALGreen establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The 2019 CALGreen standards are the current applicable standards. For nonresidential projects, some of the key mandatory CALGreen 2019 standards involve requirements related to bicycle

parking, designated parking for clean air vehicles, electric vehicle (EV) charging stations, shade trees, water conserving plumbing fixtures and fittings, outdoor potable water use in landscaped areas, recycled water supply systems, construction waste management, excavated soil and land clearing debris, and commissioning (24 CCR Part 11).

Integrated Energy Policy Report

The CEC is responsible for preparing integrated energy policy reports that identify emerging trends related to energy supply, demand, and conservation; public health and safety; and maintenance of a healthy economy. The CEC's 2018 Integrated Energy Policy Report discusses the state's policy goals of decarbonizing buildings, doubling energy efficiency savings, and increasing flexibility in the electricity grid system to integrate more renewable energy (CEC 2018b). Specifically for the decarbonizing of building energy, the goal would be achieved by designing future commercial and residential buildings to have their energy sourced almost entirely from electricity in place of natural gas. Regarding the increase in renewable energy flexibility, the goal would be achieved through increases in energy storage capacity within the state, increases in energy efficiency, and adjusting energy use to the time of day when the most amount of renewable energy is being generated. Over time these policies and trends would serve to beneficially reduce the Proposed Project's GHG emissions profile and energy consumption as they are implemented.

State Vehicle Standards

In response to the transportation sector accounting for more than half of California's carbon dioxide (CO_2) emissions, AB 1493 was enacted in 2002. AB 1493 required CARB to set GHG emissions standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles whose primary use is noncommercial personal transportation in the state. The bill required that CARB set GHG emissions standards for motor vehicles manufactured in 2009 and all subsequent model years. The 2009–2012 standards resulted in a reduction in approximately 22% of GHG emissions compared to emissions from the 2002 fleet, and the 2013–2016 standards resulted in a reduction of approximately 30%.

In 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global-warming gases with requirements for greater numbers of zero-emissions vehicles into a single package of standards called Advanced Clean Cars. By 2025, when the rules would be fully implemented, new automobiles would emit 40% fewer global-warming gases and 75% fewer smog-forming emissions (CARB 2020a). However, the U.S. Environmental Protection Agency (EPA) and National Highway Traffic Safety Administration (NHTSA) published the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule, which revokes California's authority to set its own GHG emissions standards and set zero-emission vehicle mandates in California. Since California and 22 other states, as well as the District of

Columbia and four cities, filed suit against the EPA and a petition for reconsideration of the rule, the effect of the SAFE Rule on the Advanced Clean Cars program is still to be determined pending the ruling of ongoing litigation.

Although the focus of the state's vehicle standards is on the reduction of air pollutants and GHG emissions, one co-benefit of implementation of these standards is a reduced demand for petroleum-based fuels.

Sustainable Communities Strategy

The Sustainable Communities and Climate Protection Act of 2008, or SB 375, coordinates land use planning, regional transportation plans, and funding priorities to help California meet its GHG emissions reduction mandates established in AB 32. As codified in California Government Code Section 65080, SB 375 requires Metropolitan Planning Organizations to include a sustainable communities strategy in their regional transportation plan. The main focus of the sustainable communities strategy is to plan for growth in a fashion that will ultimately reduce GHG emissions, but the strategy is also part of a bigger effort to address other development issues, including transit and vehicle miles traveled (VMT), which influence the consumption of petroleum-based fuels.

3.15.2.3 Local

As explained in Section 3.4, Greenhouse Gas Emissions, of this Draft PEIR/PEIS, the City's General Plan, Sustainable City Action Plan, and in-progress Climate Action and Adaptation Plan includes policies to conserve energy and reduce emissions associated with energy consumption. See Section 3.4 for additional discussion of the City's plans.

Sustainable City Action Plan

The City adopted the Sustainable City Action Plan (SCAP) on February 2, 2010, with the purpose of moving the City towards becoming a more sustainable City. Sustainability is defined in this plan as maximizing individual benefits and minimizing negative environmental impacts to ensure the long-term health of the environment for the enjoyment and use of current and future generations. The SCAP includes initiatives, goals, and actions that are meant to guide City decision-makers in striving towards achieving a sustainable City. The following goals, initiatives, and actions are applicable to the Proposed Project (City of Long Beach 2010):

> **Sustainability Goal 5:** Reduce community electricity use by 15% by 2020.
>
> **Sustainability Goal 6:** Reduce community natural gas use by 10% by 2020.
>
> **Sustainability Goal 7:** Facilitate the development of at least 8 megawatts of solar energy within the community (private rooftops) by 2020.

Climate Action and Adaption Plan

On May 31, 2019, the City released a working draft of the Climate Action and Adaptation Plan (CAAP). The goal of the CAAP is to reduce future GHG emissions and to prepare the City for the impacts of climate change, specifically rising sea levels, extreme heat, and poor air quality. The CAAP would provide a framework for creating and updating policies, programs, and practices to reduce the City's GHG footprint, and would incentivize the residents and businesses for their compliance. Through the City Inventory Reporting and Information System (CIRIS), the City will have a framework for calculating and reporting GHG emissions, and forecasting projected emissions based on anticipated growth. The CAAP would also include an analysis of existing sustainability and climate mitigation efforts, and develop strategies to reduce future emissions and impacts. Eventually, the CAAP would produce a plan to monitor the performance of the mitigation strategies.

Municipal Code

The City Council adopted Municipal Code Section 21.45.400 (Green building standards for public and private development.) in 2009, which includes categories of projects that require specified green building features, which includes provisions for compliance with the Leadership in Energy and Environmental Design (LEED) Green Building Rating System. In addition to the categories of projects requiring LEED compliance, green development standards, such as canopy trees in parking lots, bicycle parking, solar ready roofs, and recycling collection apply to all projects requiring Site Plan Review (SPR) entitlements.

3.15.3 Thresholds of Significance

3.15.3.1 Significance Criteria

The significance criteria used to evaluate the Proposed Project impacts to energy consumption is based on the recommendations provided in Appendix G of the State CEQA Guidelines (14 CCR 15000 et seq.). For the purposes of this energy consumption analysis, a significant impact would occur if the Proposed Project would:

1. Result in wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.
2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

3.15.3.2 Approach and Methodology

Construction Emissions

The California Emission Estimator Model (CalEEMod) Version 2016.3.2 was used to estimate potential Proposed Project-generated GHG emissions during construction, which were then used to estimate energy consumption. Construction of the Proposed Project would result in GHG emissions primarily associated with use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. All details for construction criteria air pollutants discussed in Section 3.2, Air Quality, of this Draft PEIR/PEIS, and Appendix B-1, Emission Calculations, of this Draft PEIR/PEIS are also applicable for the estimation of construction-related GHG emissions. The estimated GHGs were back-calculated based on carbon content (i.e., kilograms of CO_2 per gallon) in order to estimate fuel usage during Proposed Project construction. The conversion factor for gasoline is 8.78 kilograms per metric ton CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton CO_2 per gallon (The Climate Registry 2019). Energy use calculations for construction are provided in Appendix E.

Operational Emissions

During Proposed Project operations, activities that would consume energy would include electricity and natural gas use for building operations, electricity for water and wastewater conveyance, natural gas for emergency generator testing, and petroleum consumption from employees, customers, and delivery vehicle trips. Additional assumptions for these sources are described in Impact 3.4-1 and energy use calculations for operations are provided in Appendix E.

3.15.4 Impacts Analysis

a) Would the project result in wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?

Implementation of the Proposed Project would increase the demand for electricity and natural gas at the Plan Area and petroleum consumption in the region during construction and operation.

Electricity

Construction Use

Temporary electric power for as-necessary lighting and electronic equipment (such as computers inside temporary construction trailers and heating, ventilation, and air conditioning) during construction would be provided by SCE. The amount of electricity used during construction would be minimal; typical demand would stem from the use of electrically

powered hand tools and several construction trailers by managerial staff during the hours of construction activities. The majority of the energy used during construction would be from petroleum. The electricity used for construction activities would be temporary and minimal[1]; therefore, impacts would be less than significant.

Operational Use

The operational phase would require electricity for multiple purposes including building heating and cooling, lighting, appliances, electronics, and water and wastewater conveyance. CalEEMod provides default values for electricity consumption for the Proposed Project and Existing land uses that were applied in this analysis (CAPCOA 2017). Table 3.15-1, Operational Electricity Demand, presents the electricity demand for the Proposed Project.

Table 3.15-1
Operational Electricity Demand

Land Use	kWh/Year
Proposed Project	
Building and Lighting Electricity Demand	
Fast Food Restaurant w/o Drive Thru	1,450,580
Fast Food Restaurant with Drive Thru	483,629
General Office Building	22,131,700
High Turnover (Sit Down Restaurant)	1,601,640
Hotel	1,191,110
Manufacturing	11,369,900
Medical Office Building	1,599,900
Other Asphalt Surfaces	0
Quality Restaurant	330,410
Refrigerated Warehouse-No Rail	7,826,830
Regional Shopping Center	5,986,260
Research & Development	2,548,300
Unrefrigerated Warehouse-No Rail	10,159,600
Building Total	*66,679,859*
Water/Wastewater Electricity Demand	
All Land Uses	21,700,342
Water/Wastewater Total	*21,700,342*
Electric Forklift Energy Demand	
All Electric Forklifts	14,534,439
Electric Forklift Total	*14,534,439*
Total	**102,914,640**

[1] The construction energy analysis is based on CalEEMod default values, which assume that all off-road construction equipment is diesel, and no electricity demand is assumed during construction.

Table 3.15-1
Operational Electricity Demand

Land Use	kWh/Year
Proposed Project	
Existing	
Building and Lighting Electricity Demand	
Automobile Care Center	1,981,360
Bank (with Drive-Through)	50,028
Convenience Market (24 Hour)	73,373
General Light Industry	1,012,700
General Office Building	1,775,240
Hardware/Paint Store	311,162
High Turnover (Sit Down Restaurant)	855,080
Hospital	74,850
Manufacturing	8,415,090
Medical Office Building	192,551
Racquet Club	162,981
Regional Shopping Center	1,755,550
Unrefrigerated Warehouse-No Rail	2,129,550
Building Total	*18,789,514*
Water/Wastewater Electricity Demand	
All Land Uses	5,892,255
Water/Wastewater Total	*5,892,255*
Electric Forklift Energy Demand	
All Electric Forklifts	5,464,949
Electric Forklift Total	*5,464,949*
Total	**30,146,718**
Net Electricity Use	
Proposed Project	102,914,640
Existing	30,146,718
Net Electricity Use (Proposed – Existing)	**72,767,922**

Source: Appendix B-1, Emission Calculations and Appendix E, Energy Calculations.
Notes: kWh = kilowatt-hour.

As shown in Table 3.15-1, the Proposed Project is estimated to have a total electrical demand of 102,914,640 kWh per year (or 102.91 million kWh per year) for facility usage and water/wastewater conveyance. Existing land uses are estimated to have a total electrical demand of 30,146,718 kWh per year (or 30.15 million kWh per year) for facility usage and water/wastewater conveyance. The net change in estimated electricity consumption between the Proposed Project and Existing is estimated to be 72,767,922 kWh per year (or 72.77 million kWh per year).

For disclosure, in comparison, for Los Angeles County, electricity demand in 2018 was 68,486 million kWh (CEC 2020a). The Proposed Project would also be built in accordance with the current Title 24 standards at the time of construction and CALGreen.

Therefore, the Proposed Project would not result in a wasteful use of energy. In addition, California's energy code is designed to reduce wasteful and unnecessary energy consumption in newly constructed and existing buildings, so compliance with current code will ensure that the Proposed Project would not result in wasteful energy use. The CEC updates the Building Energy Efficiency Standards (Title 24, Parts 6 and 11) every three years by working with stakeholders in a public and transparent process, which continues to improve building energy efficiency overtime.[2] Impacts related to operational electricity use would be less than significant.

Natural Gas

Construction Use

Natural gas is not anticipated to be required during construction of the Proposed Project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed under the subsection Petroleum, below. Any minor amounts of natural gas that may be consumed as a result of Proposed Project construction would be temporary and negligible,[3] and would not have an adverse effect; therefore, impacts would be less than significant.

Operational Use

Natural gas consumption during operation would be required for various purposes, including building heating and cooling. For building consumption, default natural gas generation rates in CalEEMod for the Proposed Project and Existing land uses and climate zone were used. Table

[2] As an historical example, from the 2008 to the 2013 Title 24 standards, it was estimated that buildings constructed in accordance with the 2013 standards would use 25% less energy for lighting, heating, cooling, ventilation, and water heating than the 2008 standards (CEC 2012). From the 2013 to the 2016 Title 24 Standards, in general, single-family homes built to the 2016 standards are anticipated to use about 28% less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards, and nonresidential buildings built to the 2016 standards will use an estimated 5% less energy than those built to the 2013 standards (CEC 2015). From the 2016 to the 2019 Title 24 Standards, in general, single-family residences built to the 2019 standards are anticipated to use approximately 7% less energy due to energy efficiency measures than those built to the 2016 standards; once rooftop solar electricity generation is factored in, single-family residences built under the 2019 standards will use approximately 53% less energy than those under the 2016 standards (CEC 2018). Nonresidential buildings built to the 2019 standards are anticipated to use an estimated 30% less energy than those built to the 2016 standards (CEC 2018). Accordingly, it has been demonstrated that over time, the Title 24 standard updates have continuously improved energy efficiency in new construction.

[3] The construction energy analysis is based on CalEEMod default values, which assume that all off-road construction equipment is diesel, and no natural gas demand is assumed during construction.

3.15-2, Operational Natural Gas Demand, presents the natural gas demand for the Proposed Project, Existing, and the net change.

Table 3.15-2
Operational Natural Gas Demand

Land Use	kBTu/Year
Proposed Project	
Fast Food Restaurant w/o Drive Thru	7,721,580
Fast Food Restaurant with Drive Thru	2,574,400
General Office Building	18,254,300
High Turnover (Sit Down Restaurant)	8,525,660
Hotel	3,874,780
Manufacturing	18,803,300
Medical Office Building	1,319,600
Other Asphalt Surfaces	0
Quality Restaurant	1,758,800
Refrigerated Warehouse-No Rail	477,474
Regional Shopping Center	746,564
Research & Development	4,214,310
Unrefrigerated Warehouse-No Rail	2,281,270
Total	**70,552,038**
Existing	
Automobile Care Center	3,230,870
Bank (with Drive-Through)	81,577
Convenience Market (24 Hour)	8,913
General Light Industry	225,910
General Office Building	1,422,650
Hardware/Paint Store	37,800
High Turnover (Sit Down Restaurant)	4,470,280
Hospital	212,413
Manufacturing	13,721,900
Medical Office Building	154,307
Racquet Club	265,762
Regional Shopping Center	213,267
Unrefrigerated Warehouse-No Rail	475,054
Total	**24,520,704**
Net Natural Gas Use (Proposed – Existing)	
Proposed Project	70,552,038
Existing	24,520,704
Net Natural Gas Use (Proposed – Existing)	**46,031,335**

Source: Appendix B-1, Emission Calculations, and Appendix E, Energy Calculations.
Notes: kBtu = thousand British thermal units.

As shown in Table 3.5-2, the Proposed Project would consume approximately 70,552,038 thousand British thermal units (kBtu) per year. The Existing land uses are estimated to consume approximately 24,520,704 kBtu per year. The net change in estimated natural gas consumption between the Proposed Project and Existing is estimated to be 46,031,335 kBtu per year.

For disclosure, in comparison, in 2018, the City's LBER Department throughout was 8.94 bcf (9,264,430 million Btu) to its service area. In addition, for disclosure, 2018, SoCalGas delivered approximately 2,921 million therms (292.1 billion kBtu) to Los Angeles County (CEC 2020b). The Proposed Project is subject to statewide mandatory energy requirements as outlined in Title 24, Part 6, of the California Code of Regulations. Title 24, Part 11, contains additional energy measures that are applicable to Proposed Project under CALGreen. Prior to Proposed Project approval, the applicant would ensure that the Proposed Project would meet Title 24 requirements applicable at that time, as required by state regulations through the SPR entitlement process and building permit plan review process. Therefore, due to the inherent increase in efficiency of building code regulations, the Proposed Project would not result in a wasteful use of energy. Impacts related to operational natural gas use would be less than significant.

Petroleum

Construction Use

Petroleum would be consumed throughout construction of the Proposed Project. Fuel consumed by construction equipment would be the primary energy resource expended over the course of construction, and VMT associated with the transportation of construction materials and construction worker commutes would also result in petroleum consumption. Heavy-duty construction equipment associated with construction activities, vendor trucks, and haul trucks would rely on diesel fuel. Construction workers would travel to and from the Plan Area throughout the duration of construction. It was assumed that construction workers would travel in gasoline-powered vehicles.

Heavy-duty construction equipment of various types would be used during construction. CalEEMod was used to estimate construction equipment usage. Based on that analysis, diesel-fueled construction equipment would operate for an estimated 656,880 hours over the 20-year period, as summarized in Table 3.15-3, Hours of Operation for Construction Equipment.

Table 3.15-3
Hours of Operation for Construction Equipment

Phase	Hours of Equipment Use
Demolition	21,120
Site Preparation	11,200
Grading	48,640
Building Construction	552,160
Paving	21,120
Architectural Coating	2,640
Total over 20 years	**656,880**

Source: Appendices B-1, Emission Calculations, and Appendix E, Energy Calculations.

Fuel consumption from construction equipment and on-road vehicles was estimated by converting the total CO_2 emissions from each construction phase to gallons using conversion factors for CO_2 to gallons of gasoline or diesel. Off-road equipment is assumed to be diesel fueled. Worker vehicles are assumed to be gasoline fueled, whereas vendor and haul trucks are assumed to be diesel fueled. The conversion factor for gasoline is 8.78 kilograms per metric ton CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton CO_2 per gallon (The Climate Registry 2019). The estimated fuel use associated with construction of the Proposed Project is shown in Table 3.15-4, Construction Petroleum Demand - 20 Year Duration.

Table 3.15-4
Construction Petroleum Demand - 20 Year Duration

Project	Off-road Equipment (diesel)	Haul Trucks (diesel)	Vendor Trucks (diesel)	Worker Vehicles (gasoline)
	gallons			
Demolition	73,258.37	58,981.59	0.00	3,712.30
Site Preparation	32,743.00	0.00	0.00	2,024.83
Grading	202,781.59	92,389.81	0.00	8,549.20
Building Construction	920,994.52	0.00	449,892.07	1,018,465.83
Paving	43,155.73	0.00	0.00	3,712.30
Architectural Coatings	5,501.67	0.00	0.00	11,136.67
Totals	*1,278,434.87*	*151,371.40*	*449,892.07*	*1,047,601.14*
Total Combined Petroleum Demand	**2,927,299.47**			

Source: Appendices B-1, Emission Calculations, and Appendix E, Energy Calculations.

As shown in Table 3.15-4, the Proposed Project is estimated to consume approximately 2,927,300 gallons of petroleum during the construction phase. Averaged over 20 years, it is anticipated that the Proposed Project would consume on average 146,365 gallons of

petroleum per year. For disclosure, by comparison, approximately 28.7 billion gallons of petroleum are consumed in California annually (EIA 2020d).

Overall, because the Proposed Project would not be unusual as compared to overall local and regional demand for energy resources and would not involve characteristics that require equipment that would be less energy-efficient than at comparable construction sites in the region or state, the Proposed Project would not be any more energy inefficient or wasteful than other similar development projects. Petroleum use during construction would be less than significant.

Operational Use

The fuel consumption resulting from the Proposed Project's operational phase would be attributable to employees, customers, delivery vehicles, and heavy-heavy duty trucks traveling to and from the Plan Area. Petroleum fuel consumption associated with motor vehicles traveling to and from the Plan Area during operation is a function of VMT. As shown in Appendix B-1, Emission Calculations, the annual VMT attributable to the Proposed Project is expected to be 176,943,112 VMT per year and the annual VMT attributable to the Existing land uses is expected to be 58,338,698 VMT per year. Similar to construction worker and vendor trips, fuel consumption for operation was estimated by converting the total mobile source CO_2 emissions from the Proposed Project and Existing land use to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. The estimated fuel use from Proposed Project and Existing land uses operational mobile sources is shown in Table 3.15-5, Proposed Project Operations - Petroleum Consumption.

Table 3.15-5
Proposed Project Operations - Petroleum Consumption

Fuel	Gallons
Proposed Project	
Gasoline	3,777,916.56
Diesel	3,414,143.64
Total	*7,192,060.21*
Existing	
Gasoline	1,849,670.52
Diesel	2,322,033.75
Total	*4,171,704.27*
Net Petroleum Consumption (Proposed – Existing)	
Proposed Project	7,192,060.21
Existing	4,171,704.27
Net Petroleum Consumption (Proposed – Existing)	**3,020,355.94**

Source: Appendices B-1, Emission Calculations, and Appendix E, Energy Calculations.
Notes: MT = metric ton; CO_2 = carbon dioxide; kg = kilogram.

As depicted in Table 3.15-5, mobile sources from the Proposed Project would result in approximately 7,192,060 gallons of petroleum fuel usage per year. Existing land use mobile sources would result in approximately 4,171,704 gallons of petroleum fuel usage per year. As such, the net change in petroleum fuel usage between the Proposed Project and Existing land uses is 3,020,356 gallons per year. For disclosure, by comparison, California as a whole consumes approximately 28.7 billion gallons of petroleum per year (EIA 2020d).

Over the lifetime of the Proposed Project, the fuel efficiency of the vehicles being used by the employees, customers, and delivery vehicles is expected to increase. As such, the amount of petroleum consumed as a result of vehicular trips to and from the Plan Area during operation would decrease over time. As detailed in Section 3.15.2, there are numerous regulations in place that require and encourage increased fuel efficiency. For example, CARB has adopted an approach to passenger vehicles that combines the control of smog-causing pollutants and GHG emissions into a single, coordinated package of standards. The approach also includes efforts to support and accelerate the number of plug-in hybrids and zero-emissions vehicles in California (CARB 2011). As such, operation of the Proposed Project is expected to use decreasing amounts of petroleum over time due to advances in fuel economy.

In summary, the Proposed Project would increase petroleum use during operation as a result of employees, customers, and delivery vehicles traveling to and from the Plan Area, but, due to efficiency increases, would diminish over time. Petroleum consumption associated with the Proposed Project would not be considered inefficient or wasteful and would result in a less-than-significant impact.

CEQA Impact Determination

Based on the analysis above, the consumption of energy resources (including electricity, natural gas, and petroleum) during Proposed Project construction and operation would not be considered inefficient or wasteful and would result in a **less-than-significant** impact under CEQA. No mitigation is required.

NEPA Impact Determination

Based on the analysis above, the consumption of energy resources (including electricity, natural gas, and petroleum) during Proposed Project construction and operation would not be considered inefficient or wasteful and, and there would be **no adverse effect** under NEPA.

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

Title 24 of the California Code of Regulations contains energy efficiency standards for residential and non-residential buildings based on a state mandate to reduce California's energy demand. Specifically, Title 24 addresses a number of energy efficiency measures that impact energy used for lighting, water heating, heating, and air conditioning, including the energy impact of the building envelope such as windows, doors, wall/floor/ceiling assemblies, and roofs.

Part 6 of Title 24 specifically establishes energy efficiency standards for residential and non-residential buildings constructed in the State of California in order to reduce energy demand and consumption. Part 11 of Title 24 also includes the CALGreen standards, which established mandatory minimum environmental performance standards for new construction projects. The Proposed Project would comply with Title 24, Part 6 and Part 11, per state regulations.

Furthermore, larger scale projects that require SPR entitlements and/or use permits require compliance with Section 21.45.900 of the Municipal Code, which requires LEED certification for certain projects. The inclusion of green building standards, such as solar ready roofs, in both private and public development proposals would further citywide goals and policies for renewable energy and energy efficiency.

As discussed previously, the City adopted their SCAP in 2010, which includes initiatives, goals, and actions that are meant to guide City decision-makers in striving towards achieving a sustainable City, including energy strategies. Table 3.15-6, Proposed Project Consistency with Applicable SCAP Energy Strategies, presents the Proposed Project's consistency with the applicable SCAP energy strategies.

Table 3.15-6
Proposed Project Consistency with Applicable SCAP Energy Strategies

Sustainability Goals	Proposed Project Consistency
Reduce community electricity use by 15% by 2020	*No Conflict.* The Proposed Project's intent is to improve the sustainability of the Plan Area through low-impact development, drought tolerant landscaping, solar-shaded parking lots, building orientation and tree canopies. Each of these components individually and collectively work to reduce community electricity consistent with this action.

Table 3.15-6
Proposed Project Consistency with Applicable SCAP Energy Strategies

Sustainability Goals	Proposed Project Consistency
Reduce community natural gas use by 10 % by 2020	*No Conflict.* The Proposed Project would improve sustainability of development within the GCSP, which may reduce natural gas usage. While the GCSP does not include specific natural gas reduction requirements, the Proposed Project would not prevent the City from implementing this measure.
Facilitate the development of at least 8 Megawatts of solar energy within the community (private rooftops) by 2020	*No Conflict.* Chapter 6 of the GCSP (Design Guidelines) contains a guideline in the General Industrial district, which occupies the majority of parcels west of Cherry Avenue and south of the I-405, to incorporate sustainable surface parking lot design through use of solar shade structures for vehicles, which could contribute to the City's goal of developing at least 8 Megawatts of solar energy in the community.

Source: City of Long Beach 2010.

As shown in Table 3.15-6, the Proposed Project would not conflict with the applicable SCAP energy strategies.

The City is also in the progress of developing a CAAP, which include priority mitigation action related to energy. The Proposed Project's consistency with the draft CAAP energy mitigation actions is presented in Table 3.15-7, Proposed Project Consistency with Draft CAAP Buildings and Energy Strategies.

Table 3.15-7
Proposed Project Consistency with Draft CAAP Buildings and Energy Strategies

Priority Mitigation Actions	Proposed Project Consistency
BE-1 Provide access to renewably generated electricity	*No conflict.* The Proposed Project may include solar rooftops and shade structures over parking areas as individual projects are developed, which would provide access to renewably generated electricity.
BE-2 Develop a home energy assessment program	*Not applicable*. This action is directed at the City. The Proposed Project does not permit residential uses; therefore, the Proposed Project would not apply to the development of a home energy assessment program.
BE-3 Provide access to energy efficiency financing, rebates, and incentives for building owners	*Not applicable*. This action is directed at the City. The Proposed Project is a Specific Plan that does not include access to energy efficiency financing, rebates or incentives to individual business owners.
BE-4 Promote community solar and microgrids	*Not applicable.* This action is directed at the City. The Plan Area is not under single ownership that would enable the development of a microgrid system, and large scale community solar generation is not permitted in the Plan Area as it would not support the primary goal of the GCSP, which is to generate jobs.

Table 3.15-7
Proposed Project Consistency with Draft CAAP Buildings and Energy Strategies

Priority Mitigation Actions	Proposed Project Consistency
BE-5 Perform municipal energy audits	*Not applicable.* This action is directed at the City. The Plan Area is not a municipality that would perform energy audits.

Source: City of Long Beach 2019,

As shown in Table 3.15-7, the Proposed Project would not conflict with the applicable energy mitigation actions of the City's draft CAAP.

CEQA Impact Determination

Based on the foregoing, the Proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency including the City's plans to reduce energy consumption; therefore, impacts during construction and operation of the Proposed Project would be **less than significant**. No mitigation is required.

NEPA Impact Determination

Based on the analysis above, the Proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, and there would be **no adverse effect** under NEPA.

3.15.5 Cumulative Impacts

Cumulative projects that could exacerbate the Proposed Project's impacts include any projects that could result in wasteful, inefficient, or unnecessary use of energy. However, the Proposed Project would not result in wasteful, inefficient, or unnecessary use of energy, since the Proposed Project would not be unusual as compared to overall local and regional demand for energy resources and would not involve characteristics that require equipment that would be less energy-efficient than at comparable construction sites in the region or state. Additionally, the operational activity of the Proposed Project would be minimized through energy reduction strategies pursuant to Title 24, as described in Section 3.5.4.3, Impacts and Mitigation Measures. For all other projects in the City are required to comply with Title 24, the long-term energy consumption of those projects would also be reduced. Therefore, cumulative impacts to energy use would be **less than significant**.

3.15.6 Mitigation Measures

Impacts relating to energy would be less than significant and no mitigation would be necessary.

However, as presented in Section 3.2, Air Quality, of this Draft PEIR/PEIS, implementation of mitigation measure **MM-AQ-1** (Construction Equipment Emissions Reductions) would reduce construction-related energy consumption. Implementation of the following air quality mitigation measures would reduce operational-related energy consumption: **MM-AQ-4** (Vehicle Miles Traveled Reduction Strategies), **MM-AQ-5** (Encourage Electric Vehicles), **MM-AQ-6** (Idling Restriction), **MM-AQ-7** (Energy Conservation), **MM-AQ-9** (Electric Forklifts), and **MM-AQ-10** (TRU Plug-Ins). In addition, as presented in Section 3.4, Greenhouse Gas Emissions, of this Draft PEIR/PEIS, implementation of mitigation measure **MM-GHG-1** (Water Conservation) would further reduce energy consumption during operation of the Proposed Project.

3.15.7 Significance After Mitigation

Impacts related to energy would be less than significant and no further mitigation is required.

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CHAPTER 4.0
ALTERNATIVES

The California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) require that an EIR and EIS describe a range of reasonable alternatives to a project that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any significant environmental impacts. An EIR/EIS is also required to evaluate the comparative merits of the alternatives. This chapter of the PEIR/PEIS describes and evaluates project alternatives and implements the requirements set forth in the State CEQA Guidelines and NEPA Guidance for an alternatives analysis. This chapter also identifies the Environmentally Superior Project Alternative as required by State CEQA Guidelines Section 15126.6(e)(2) and the Preferred Alternative per NEPA.

4.1 CEQA AND NEPA ALTERNATIVES REQUIREMENTS

CEQA

CEQA requires analysis of a reasonable range of alternatives to the Proposed Project to foster informed decision making and public participation (CEQA Guidelines, Section 15126.6 (a)). CEQA states that, the EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed (CEQA Guidelines, Section 15126.6). The alternatives need only "include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project" (CEQA Guidelines, Section 15126.6 (d)). Other requirements include:

- Providing a "no project" alternative (CEQA Guidelines, Section 15126.6(e));
- Explaining why rejected alternatives are considered infeasible (CEQA Guidelines, Section 15126.6(c)); and
- Identifying the agency's "environmentally superior alternative." If the environmentally superior alternative is the "no project" alternative, then the EIR must identify an environmentally superior alternative among the other alternatives" (CEQA Guidelines, Section 15126.6 (e)(2)).

NEPA

NEPA also requires the analysis of a reasonable range of alternatives be analyzed in an EIS. A reasonable range of alternatives includes those that are practical or feasible from the technical and

economic standpoint. NEPA implementing regulation 40 CFR Section 1502.14 states that the lead agency must rigorously explore and objectively evaluate all reasonable alternatives, devote substantial treatment to each alternative, identify the preferred alternative where one or more exists, and present the environmental impacts of the proposed action and the alternatives in comparative form to sharply define the issues and provide a clear basis for a choice among alternatives by the decision maker and the public. Other requirements include:

- Providing a "no action" alternative (40 C.F.R. Section 1502.14(d));
- Explaining why any alternatives were eliminated from detailed analysis (40 C.F.R. Section 1502.14(a));
- Identifying the environmentally preferred alternative (40 C.F.R. Section 1502.14(e)).

With the exception of the required No Action Alternative (in this PEIR/PEIS, the No Action Alternative is referred to as the No Project Alternative for clarity in consistency with CEQA requirements), alternatives to the Proposed Action must meet the stated purpose and need for the project. To be considered reasonable, an alternative has to be technically and economically feasible, needs to be consistent with the basic policy objectives for management of the area (e.g., consistent with land use plan), its implementation must not be remote or speculative, and it must not be substantially similar in design and effects to an alternative that is already analyzed.

4.2 SELECTION OF ALTERNATIVES

CEQA

The range of alternatives and methods for selection is governed by CEQA and applicable CEQA case law. As stated in State CEQA Guidelines Section 15126.6(a), the lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. This chapter includes the range of project alternatives that have been selected by the lead agency (in this case, the City) for examination, as well as its reasoning for selecting these alternatives.

As stated in Section 15126.6(a) of the State CEQA Guidelines, there is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason. This rule is described in Section 15126.6(f) of the State CEQA Guidelines and requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. As defined in Section 15126.6(f), the rule of reason limits alternatives analyzed to those that would avoid or substantially lessen one or more of the significant effects of a project. Of those alternatives, an EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. Other relevant provisions set forth in the State CEQA Guidelines state that EIRs do not need to consider every conceivable alternative to a project, nor are they required to consider

alternatives that are infeasible. As indicated in Chapter 3.0, Environmental Analysis, the Proposed Project would result in significant and unavoidable impacts related to air quality, cultural resources, greenhouse gas (GHG) emissions, and transportation and traffic. Consistent with CEQA, the analysis presented in this chapter considers whether a reasonable range of alternatives to the proposed Globemaster Corridor Specific Plan (GCSP; Proposed Project) could reduce those impacts. The selection of alternatives and their discussion must "foster informed decision making and public participation" (14 CCR 15126.6(a)).

NEPA

Under NEPA, alternatives are developed to explore other ways of meeting the purpose and need for the Proposed Action. Alternatives to the Proposed Action must be developed to address one more resource issues and have demonstrable impact differences when compared to the Proposed Action. In other words, the EIS must analyze alternatives that are not substantially similar in design and effects to the Proposed Action or other action alternative. As indicated in Chapter 3.0, Environmental Analysis, the Proposed Project would result in adverse effects related to air quality, cultural resources, greenhouse gas (GHG) emissions, and transportation and traffic. Consistent with NEPA, the analysis presented in this chapter presents a reasonable range of alternatives to the proposed Globemaster Corridor Specific Plan (GCSP; Proposed Project) that could reduce those impacts.

When the EIS process concludes, the lead agency's decision is recorded in a public Record of Decision (ROD). The ROD will identify all alternatives considered by the agency in reaching its decision, specify the alternative or alternatives which were considered to be environmentally preferable (40 C.F.R. Section 1505.2(b)). In addition to discussion of alternatives, the ROD shall state "whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted and if not, why they were not" (40 C.F.R. Section 1505.2(C)). Finally, the Preferred Alternative is not necessarily the environmentally superior alternative. NEPA does not require that the agency's preferred alternative must have the least environmental impact. Therefore, this chapter identifies potential alternatives to the Proposed Project and evaluates them, as required by CEQA and NEPA.

4.2.1 Proposed Project

As described above, a project's objectives and the significant impacts of a project are key determiners of the alternatives that are initially examined by the lead agency and the alternatives that are ultimately carried forward for detailed analysis in an EIR/EIS. To that end, this subsection includes (a) a summary of the Proposed Project's characteristics to facilitate comparison between the Proposed Project and its alternatives, (b) a statement of purpose and need for the Proposed Project, (c) the list of Proposed Project objectives, and (d) a summary of the Proposed Project's significant impacts.

Proposed Project Summary

The Proposed Project provides a framework for the development and improvement of the 437-acre Plan Area, located in the north-central portion of the City of Long Beach (City) on the west and south sides of the Long Beach Airport.

The applicant is the City of Long Beach. The City has developed the GCSP as part of a comprehensive transition program in the wake of the closure of the C-17 Globemaster III military aircraft production facility owned by the Boeing Corporation (C-17 Site). The GCSP will build upon the work developed in phase one of the C-17 Transition Master Plan in 2016 and provide a strategic planning framework for attracting quality industries and improving the character, design, and functionality of the Plan Area. The C-17 Site is located on the east side of Cherry Avenue adjacent to the west side of the Long Beach Airport. The central portion of the Plan Area encompasses the approximately 93-acre former Boeing aircraft manufacturing facility, while the remainder of the Plan Area includes industrial and commercial corridors and nodes along Cherry Avenue and Spring Street.

Building on the legacy of the Boeing aircraft manufacturing industry and the high-quality jobs it provided, the GCSP aims to continue to attract and optimize new work opportunities to retain the regional skills base, expertise, and competitive economies of Long Beach Airport, the City of Long Beach, and the Southern California region. The GCSP represents the next step in the overall transition of the former Boeing C-17 Site and surrounding Plan Area. The GCSP assigns appropriate land use districts for land properties within the Plan Area, including six development districts and two overlay zones. The GCSP establishes a land use and mobility plan, development regulations, design guidelines, infrastructure requirements and implementation strategies necessary to becoming a flexible commercial and industrial district in the City. No residential component is included in the GCSP.

Statement of Purpose and Need for the Proposed Project

In 2013, Boeing Corporation announced it would end production of the C-17 Globemaster III military aircraft, causing the closure of the C-17 Site in the City of Long Beach. This closure resulted in the layoff of approximately 1,600 workers and caused additional economic impacts across the supply chain. In addition to the manufacturing, engineering, and project management jobs within the aerospace/defense sectors, other job losses within the service realm will occur. Further, the C-17 Site closures leaves vacant a distinctive site, which includes a 1.2 million square foot enclosed production space adjacent to the Long Beach Airport. To address these impacts, the City has undertaken the C-17 Master Plan to provide economic development planning, land use and infrastructure planning, and assistance to impacted firms and workers. As the results of the C-17 Transition Master Plan revealed the need for comprehensive planning that addressed land use, economic development, and

infrastructure improvements in the Plan Area, the City determined that a Specific Plan was the appropriate tool to approach each need holistically. The GSCP meets the City's needs for a comprehensive planning tool to guide land use and infrastructure improvements to enhance the economic functionality of the Plan Area, following the C-17 Site closure.

The purpose of the GCSP is to provide the planning and regulatory framework for guiding future development and attracting quality jobs to the 437-acre Plan Area. The vision of the GCSP is to serve as a 21st Century innovation employment district. Building on the legacy of the Boeing aircraft manufacturing industry and the high-quality jobs it provided, the Plan Area will continue to attract and optimize new work opportunities to retain the regional skills base, expertise and competitive economies of Long Beach Airport, the City of Long Beach, and the Southern California region. The land use districts proposed within the GCSP are intended to create a flexible, commercial and industrial district. In addition, the strategic implementation and administration framework will foster pedestrian, bicycle and transit mobility, improve connectivity, provide open space and amenities, and enhance the design and functionality of the workforce environment. The GCSP will become a destination where leading-edge firms come to leverage its locational advantage adjacent to Long Beach Airport, the Port of Long Beach, I-405 freeway, and a thriving residential and business community.

Project Objectives

The objectives for the Proposed Project include:

- **Create a 21st Century Employment District that Fosters Innovation:** The workforce of the 21st century is seeking places that integrate jobs into active urban lifestyles. The GCSP will guide development and infrastructure investments to integrate business park, industrial, and commercial uses with supporting amenities in a flexible, commercial and industrial, multi-modal and sustainable campus-style environment. This will include breaking down the superblocks into a grid of walkable and bikeable streets and introducing sustainable and thoughtfully designed buildings, sites, open spaces and streetscapes. This goal also recognizes that while innovation has a spatial component (i.e., dynamic clusters of people working together are the source of social and technological breakthroughs), maintaining affordability through adaptive reuse of existing buildings to create small-scale, low-rent, urban environments are important to attract and retain innovators.
- **Stimulate Economic Development and Job Growth:** A principal driver of the GCSP is to stimulate economic growth and attract businesses that replenish high-quality jobs lost from the closure of the former Boeing C-17 manufacturing plant. This will require a level of effort that extends beyond the controls of a land use plan, development standards, and implementing mechanisms found within the pages of the GCSP. Attracting key anchor tenants will rely on a coordinated effort between City staff, independent brokers, politicians, and the right mix of incentives to drive private investment to the district.

- **Cultivate the Existing Human Capital of Long Beach:** Human capital refers to the knowledge, skill sets, and motivation people have, which provide economic value. Human capital is directly related to economic growth as it can help to develop an economy through the knowledge and skills of people. Human capital realizes not everyone has the same skill sets or knowledge and that quality of work can be improved by investing in people's education. In addition to attracting quality businesses, investing in Long Beach's human capital and proactively connecting residents, and in particular former Boeing employees, with new job opportunities in the district, is an important goal of the GCSP.
- **Establish Cherry Avenue as a Multi-Modal Unifying Corridor:** Cherry Avenue is a central unifying backbone for the GCSP and provides key gateways to the district at its intersection with Carson Avenue and Spring Street. The corridor is well-located for future success based on its high visibility, regional accessibility, traffic counts, and proximity to flanking neighborhoods and businesses. The GCSP will guide the development of Cherry Avenue to become an economically thriving corridor with business and commercial infill development strategies that bring neighborhood and business-serving commercial uses, as well as employment opportunities within walking distance of existing neighborhoods. Cherry Avenue will also be improved as a street that enables active transportation, calms traffic, and creates a new identity for the district. Improving the "front door" of the GCSP by both incremental and comprehensive changes to Cherry Avenue will strengthen the economic, environmental, and visual performance of the district as a whole.
- **Increase Mobility Choices Throughout the Globemaster Corridor District:** Multiple transportation options can broaden the benefits of innovation to the City at large. For an innovation district, solid multimodal transportation means district employees have a greater choice of residence and lifestyle options. Connections between local transportation networks and regional or global transportation can also give a district a competitive edge. The GCSP will leverage its local, regional, and global transportation connections by enhancing internal connectivity and increasing mobility options within and to/from the Plan Area. Improvements will be focused on connectivity and accessibility for active transportation modes and shared mobility.

Environmental Impacts of the Proposed Project

The analysis in the Initial Study (IS) (Appendix A) for the Proposed Project determined the Proposed Project would result in either no impacts or less than significant impacts related to the following issue areas: Agriculture and Forestry Resources, Biological Resources, Geology and Soils, Mineral Resources, and Recreation. As described in Chapter 3.0, Environmental Analysis, the Proposed Project would result in less than significant impacts to Aesthetics, Hydrology and Water Quality, Land Use and Planning, Population and Housing, Public Services, Utilities and Services Systems, and Environmental Justice. The Proposed Project would result in less than

significant impacts with mitigation incorporated to Energy, Hazards and Hazardous Materials, Noise, and Tribal Cultural Resources. The Proposed Project would result in significant and unavoidable impacts to Air Quality, Cultural Resources, Greenhouse Gas emissions, and Transportation and Traffic. These impacts are summarized below:

Air Quality

Conflict with Air Quality Management Plan

The evaluation of whether the Proposed Project would conflict with or obstruct implementation of the applicable air quality plan is based on the SCAQMD CEQA Air Quality Handbook. Criterion No. 1 assesses if the Proposed Project would result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards of the interim emissions reductions specified in the AQMP. The Proposed Project would potentially conflict with Consistency Criterion No. 1 because the Proposed Project would result exceed the SCAQMD construction thresholds for VOC and NO_x and the SCAQMD operational thresholds for CO, VOC, and PM_{10}, and VOC and PM_{10} are nonattainment pollutants under the NAAQS and/or CAAQS (VOC as a precursor to O_3, which is the nonattainment pollutant). Because the Proposed Project would result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, the Proposed Project would potentially conflict with Consistency Criterion No. 1 of the SCAQMD CEQA Air Quality Handbook. Implementation of the Proposed Project would not exceed the demographic growth forecasts in the Southern California Association of Governments (SCAG) 2016 Regional Transportation Plan/Sustainable Communities Survey (RTP/SCS); therefore, the Proposed Project would be consistent with the South Coast Air Quality Management District (SCAQMD) 2016 Air Quality management Plan (AQMP), which based future emission estimates on the SCAG 2016 RTP/SCS. Thus, the Proposed Project would not conflict with Consistency Criterion No. 2. However, because the Proposed Project would potentially conflict with Consistency Criterion No. 1, impacts related to the Proposed Project's potential to conflict with or obstruct implementation of the applicable air quality plan is considered potentially significant and mitigation is required. Mitigation measures **MM-AQ-1** (Construction Equipment Emissions Reductions), **MM-AQ-2** (Fugitive Dust Control),[1] and **MM-AQ-3** (Architectural Coating VOC Emissions) would be required to reduce Proposed Project construction-related emissions and mitigation measures **MM-AQ-4** (Vehicle Miles Traveled Reduction Strategies), **MM-AQ-5** (Encourage Electric Vehicles), **MM-AQ-6** (Idling Restriction), **MM-AQ-7** (Energy Conservation), **MM-AQ-8** (Low-VOC-Green Cleaning Product Education Program), **MM-AQ-9** (Electric Forklifts), and **MM-AQ-10** (TRU Plug-Ins) would be required to reduce emissions generated during operation of the Proposed Project. Mitigation measure **MM-AQ-1** would reduce

[1] Even though estimated Proposed Project mass daily emissions do not exceed the $PM_{10,}$ and $PM_{2.5}$.

various air pollutant emissions associated with construction equipment operation. Mitigation measure **MM-AQ-2** would reduce dust-related PM_{10} and $PM_{2.5}$ emissions generated during construction and mitigation measure **MM-AQ-3** would reduce VOC emissions generated the application of architectural coating during construction. Mitigation measures **MM-AQ-4**, **MM-AQ-5**, and **MM-AQ-6** aim to reduce operational mobile source emissions of various air pollutants. Mitigation measure **MM-AQ-7** focuses on reducing energy-related operational emissions and mitigation measure **MM-AQ-8** encourages reduction of operational area source VOC emissions. Mitigation measure **MM-AQ-9** would reduce criteria air pollutants by replacing diesel-fueled forklifts with electric forklifts and mitigation measure **MM-AQ-10** would reduce criteria air pollutants generated by TRU idling. Nonetheless, even with the implementation of mitigation, due to the magnitude of emissions associated with buildout of the Proposed Project, potential impacts would remain **significant and unavoidable** under CEQA, and potential effects would remain **adverse** under NEPA.

Cumulatively Considerable Net Increase of Nonattainment Criteria Air Pollutants

Because construction specifications are not currently available, under a conservative scenario where maximum emissions from each assessed construction phase would occur concurrently, estimated Proposed Project emissions would exceed the SCAQMD thresholds for VOC and NO_x. Emissions of CO, SO_x, PM_{10}, and $PM_{2.5}$ are not estimated to exceed SCAQMD thresholds. The implementation of mitigation measures **MM-AQ-1** through **MM-AQ-3** would be required to reduce Proposed Project construction-related emissions. As described previously, mitigation measure **MM-AQ-1** would reduce various air pollutant emissions associated with construction equipment operation, mitigation measure **MM-AQ-2** would reduce dust-related PM_{10} and $PM_{2.5}$ emissions generated during construction (even though estimated Proposed Project mass daily emissions do not exceed the PM_{10}, and $PM_{2.5}$), and mitigation measure **MM-AQ-3** would reduce VOC emissions generated the application of architectural coating during construction. Nonetheless, even with the implementation of mitigation, Proposed Project-generated construction criteria air pollutant emissions would remain **significant and unavoidable**, under CEQA, and potential effects would remain **adverse** under NEPA.

During operations, Proposed Project-generated VOC, CO, and PM_{10} would exceed the SCAQMD thresholds. Mitigation measures **MM-AQ-4** (Vehicle Miles Traveled Reduction Strategies), **MM-AQ-5** (Encourage Electric Vehicles), **MM-AQ-6** (Idling Restriction), **MM-AQ-7** (Energy Conservation), **MM-AQ-8** (Low-VOC-Green Cleaning Product Education Program), **MM-AQ-9** (Electric Forklifts), and **MM-AQ-10** (TRU Plug-Ins) would be required to reduce emissions generated during operation of the Proposed Project. Nonetheless, even with the implementation of mitigation, potential impacts during operation of the Proposed Project would remain **significant and unavoidable** under CEQA, and potential effects would remain **adverse** under NEPA.

Sensitive Receptor Impacts

Sensitive receptors are those individuals more susceptible to the effects of air pollution than the population at large. To determine the Proposed Project's potential to impact nearby sensitive receptors, a Localized Significance Thresholds (LST) analysis, Carbon Monoxide (CO) hotspots screening evaluation, Toxic Air Contaminants (TAC) exposure analysis, and criteria air pollutant health effect evaluation were conducted. The determinations were as follows:

According to the LST analysis, construction activities associated with the Proposed Project would generated PM_{10} and $PM_{2.5}$ emissions in excess of site-specific LSTs; therefore, localized construction impacts would be potentially significant and mitigation is required. Mitigation measures **MM-AQ-1** and **MM-AQ-2** (Construction Equipment Emissions Reduction and Fugitive Dust Control, respectively) would be required to reduce the Proposed Project's construction-related emissions. Nonetheless, site-specific impacts during construction of the Proposed Project would remain **significant and unavoidable** under CEQA, and potential effects would remain **adverse** under NEPA.

The CO hotspots screening evaluation determined the Proposed Project would not negatively affect the LOS of intersections in the Proposed Project vicinity and would not significantly contribute to a CO hotspot.

The potential health risk of exposing sensitive receptors to construction-generated TAC emissions, primarily DPM, is considered potentially significant and mitigation is required. Implementation of mitigation measure **MM-AQ-1**, which would result in reductions in exhaust PM10 emissions from construction equipment, would be required. Nonetheless, the potential health risk of exposing sensitive receptors to construction-generated TAC emissions, primarily DPM, is considered **significant and unavoidable**. Operational TAC exposure could not be identified due to the uncertainty of future sensitive receptor locations and the effectiveness of TAC reduction measures. However, to reduce the potential for the Proposed Project to expose sensitive receptors to TACs and the associated health risk, mitigation measures **MM-AQ-11** (Health Risk Siting), **MM-AQ-12** (Toxic Air Contaminant Reduction) and **MM-AQ-13** (Health Risk Assessment Requirements) would be implemented. Nonetheless, even with the implementation of mitigation, which cannot be quantified at this time, the Proposed Project would have a **significant and unavoidable** health risk impact as a result of operation under CEQA, and potential effects would remain **adverse** under NEPA. Note that mitigation measures that reduce criteria air pollutants also reduce TACs, specifically mitigation measures **MM-AQ-6** (Idling Restriction), **MM-AQ-9** (Electric Forklifts), and **MM-AQ-10** (TRU Plug-Ins).

Nonetheless, even with the implementation of mitigation, which cannot be quantified at this time, the Proposed Project would have a **significant and unavoidable** health risk impact as a result of operation under CEQA, and potential effects would remain **adverse** under NEPA.

Based on the criteria air pollutant evaluation, because construction and operation of the Proposed Project could result in exceedances of the SCAQMD significance thresholds for VOC, NO_x, CO, and PM_{10} , the potential health effects associated with criteria air pollutants are considered potentially significant. The implementation of mitigation measures **MM-AQ-1** through **MM-AQ-3** would be required to reduce the Proposed Project's construction-related emissions, and the implementation of mitigation measures **MM-AQ-4** through **MM-AQ-10** would be required to reduce emissions generated during operation of the Proposed Project. Nonetheless, even with the implementation of mitigation, potential impacts would remain **significant and unavoidable** during both construction and operation under CEQA, and potential effects would remain **adverse** under NEPA.

Cultural Resources

Adverse Change in the Significance of a Historical Resource

This programmatic project is specifically planning and rezoning for the Plan Area. No ground-disturbing project-level activities are proposed as part of the Proposed Project. However, subsequent future projects that could be implemented as a result of the GCSP could potentially impact previously-recorded CEQA historical resources and those properties that contain buildings and structures 45 years old or older that have not been identified.

There are known historical resources in the Plan Area and the potential for more properties that have not been evaluated and could be CEQA historical resources. In particular, the Plan Area includes resources that are recently reaching 45 years or more of age and are associated with periods of Long Beach history not fully documented in the Historic Context Statement. Preservation of these modern buildings may not be feasible or consistent with the goals of the GCSP. Furthermore, as these resources are not listed, may be eligible for local listing but not the state or national register, impacts under CEQA will differ from NEPA.

Implementation of mitigation measure **MM-CUL-1**, which requires future project proponents to ensure that potential impacts to historical resources be assessed at the project level, and that properties 45 years old or older be evaluated for historical significance prior to initiation of any project-related activities that could identify significant impacts to historic properties. Development under the proposed GCSP has a potential for demolishing structures that are eligible for historic significance.

In the event, a future development proposal could result in the demolition of a historical resource, the inclusion of mitigation measure **MM-CUL-2** would ensure that the historic structure is documented pursuant to the guidelines of Historic American Building Survey (HABS)-level III. This documentation would be prepared by a qualified professional in the field. Due to the potential loss of historic age structures with implementation of the GCSP, significant impacts would remain after the incorporation of identified mitigation. As such, impacts would be **significant and unavoidable** under CEQA, and potential effects would remain **adverse** under NEPA.

Greenhouse Gas Emissions

Construction and operation of the Proposed Project would result in GHG emissions. As shown in Table 3.4-2 (see Section 3.4, Greenhouse Gas Emissions, of this Draft PEIR/PEIS), the estimated total GHG emissions during construction of would total approximately 28,492 MT CO_2e over the assumed 20-year construction period. Estimated Proposed Project-generated construction emissions amortized over 30 years would be approximately 950 MT CO_2e per year. As shown in Table 3.4-3 (see Section 3.4, Greenhouse Gas Emissions, of this Draft PEIR/PEIS), estimated annual Proposed Project-generated GHG emissions would be approximately 120,999 MT CO_2e per year as a result of Proposed Project operations only. As the Existing Scenario is estimated to generate 57,783 MT CO_2e per year, the net change in emissions is estimated to be 63,216 MT CO_2e per year. After accounting for amortized Proposed Project construction emissions, total net GHGs generated by the Proposed Project would be approximately 64,166 MT CO_2e per year. As such, annual operational GHG emissions with amortized construction emissions would exceed the SCAQMD threshold of 3,000 MT CO_2e per year.

Because the Proposed Project would exceed the Tier 3 SCAQMD threshold of 3,000 MT CO_2e per year, a Tier 4 analysis is conducted to evaluate the Proposed Project's efficiency on a service population basis. The Tier 4 efficiency metric threshold used is 1.92 MT CO_2e/SP/year consistent with the RDEIR prepared for the General Plan Land Use and Urban Design Elements Project (City of Long Beach 2019b), which is also a plan-level analysis with a 2040 buildout year. The efficiency metric threshold used is 1.92 MT CO_2e/SP/year is more stringent than the proposed SCAQMD 2035 efficiency metric of 4.1 MT CO_2e/SP/year for plan level analyses. As shown in Table 3.4-3, the Proposed Project would generate approximately 120,999 MT CO_2e per year as a result of Proposed Project operations only; however, the net change between the Proposed Project and Existing, plus amortized Proposed Project construction emissions, is 64,166 MT CO_2e per year. The Proposed Project's service population, which is defined as residents plus employees, consists solely of employees as the Proposed Project does not include a residential land use component. Per the Proposed Project's job projection analysis, the estimated service population (i.e., employees) for the Proposed Project is 11,170 (Svesson 2020).[2] Accordingly, the Proposed Project is estimated to result in 5.74 MT CO_2e/SP/year (64,166 MT CO_2e/year ÷ 11,170 SP), which would exceed the applied efficiency metric threshold 1.92 MT CO_2e/SP/year.

[2] As explained in Chapter 2.0, Project Description and Section 3.2, Air Quality, in 2040, the estimated job absorption for the Proposed Project is 4,884; the remaining 6,286 jobs are anticipated to occur after 2040. However, the emission inventory for the Proposed Project, as presented in Table 3.4-3, assumes buildout of the entire GCSP by 2040. Therefore, it is appropriate to assume the full employment projection to estimate an efficiency metric when using full buildout emissions as the basis.

Therefore, the Proposed Project's GHG contribution would be cumulatively considerable and is potentially significant. Implementation of mitigation measures **MM-AQ-1** (Construction Equipment Emissions Reductions), **MM-AQ-4** (Vehicle Miles Traveled Reduction Strategies), **MM-AQ-5** (Encourage Electric Vehicles), **MM-AQ-6** (Idling Restriction), **MM-AQ-7** (Energy Conservation), **MM-AQ-9** (Electric Forklifts), **MM-AQ-10** (TRU Plug-Ins), **MM-GHG-1** (Water Conservation), and **MM-GHG-2** (Solid Waste Reduction) would reduce Proposed Project-generated GHG emissions. However, even with the implementation of mitigation, impacts would remain **significant and unavoidable** under CEQA, and potential effects would remain **adverse** under NEPA.

The Proposed Project would potentially conflict with plans, policies, or regulations adopted for the purpose of reducing GHG emissions, and as such, impacts are considered potentially significant. As discussed previously, implementation of mitigation measures **MM-AQ-1** (Construction Equipment Emissions Reductions), **MM-AQ-4** (Vehicle Miles Traveled Reduction Strategies), **MM-AQ-5** (Encourage Electric Vehicles), **MM-AQ-6** (Idling Restriction), **MM-AQ-7** (Energy Conservation), **MM-AQ-9** (Electric Forklifts), **MM-AQ-10** (TRU Plug-Ins), **MM-GHG-1** (Water Conservation), and **MM-GHG-2** (Solid Waste Reduction) would reduce Proposed Project-generated GHG emissions and associated impacts related to the potential to conflict with applicable GHG emissions reduction plans, policies, or regulations. In addition to the various mitigation measures required, the City is in the process of developing a Climate Action and Adaptation Plan (CAAP) to ensure that the City continues on a trajectory that aligns with the short-term, interim, and long-term State GHG reduction goals. Implementation of the CAAP would contribute to reducing GHG emissions resulting from Proposed Project implementation to the extent applicable to non-residential land use development. However, no credit for the Citywide emissions reduction plan was taken, as the implementation of the CAAP is speculative until its approved. Even with the implementation of mitigation, impacts would remain **significant and unavoidable** under CEQA.

Transportation

Existing (Year 2018) Plus Project Conditions

The Traffic Impact Analysis (Appendix D) evaluates the Proposed Project-related impacts at 28 key study intersections per City of Long Beach and City of Signal Hill significant impact criteria. Under the Existing (2018) Plus Project Intersection Peak Hour Levels of Service, six of the key intersections are forecast to operate adversely with the addition of Proposed Project Traffic. Five of these intersections are considered significantly impacted compared to LOS standards. With the implementation of mitigation measures **MM-TRAF-1** through **MM-TRAF-5**, all intersections would operate at acceptable LOS conditions under Existing (Year 2018) Plus Project conditions.

Although the intersection of Orange Avenue/I-405 southbound ramps is forecast to operate at unacceptable LOS F in the AM and PM peak hour, the intersection is not considered affected when compared to the LOS standards utilized by City of Long Beach, which specifies that an unsignalized intersection impact is considered to be significant if the project causes an intersection at LOS D or better to degrade to LOS E or F. Also, preliminary review of the existing volumes indicate that the intersection satisfies the criteria for the installation of a traffic signal. Should Caltrans or the City of Long Beach desire to install a traffic signal at this location, the Proposed Project may be expected to pay a fair-share of the total cost.

Year 2040 Plus Project Conditions

Under the Year 2040 Baseline Plus Project traffic conditions, 10 of the key intersections are forecast to operate adversely with the addition of Proposed Project traffic, and are considered significantly impacted when compared to the LOS standards utilized by City of Long Beach. Implementation of mitigation measures **MM-TRAF-5** through **MM-TRAF-13** at the significantly impacted intersections will completely offset the Proposed Project's impact and improve the LOS to acceptable conditions.

Although the intersection of Orange Avenue/I-405 southbound ramps is forecast to operate at unacceptable LOS F in the AM and PM peak hour, the intersection is not considered affected when compared to the LOS standards utilized by City of Long Beach, which specifies that an operational deficiency occurs if the project causes an intersection at LOS D or better to degrade to LOS E or F. Since the study intersection currently operates at an adverse LOS under existing traffic conditions, the Proposed Project's affect is not considered to be adverse or unacceptable. Although this intersection is not considered significantly impacted, it does operate adversely under existing traffic conditions. Also, preliminary review of the existing volumes indicate that the intersection satisfies the criteria for the installation of a traffic signal. Should Caltrans or the City of Long Beach desire to install a traffic signal at this location, future development under the Proposed Project may be expected to pay a fair-share of the total cost.

Caltrans Facilities Analysis

In conformance with the current Caltrans *Guide for the Preparation of Traffic Impact Studies, dated December 2002*, existing and projected peak hour operating conditions at the four state-controlled study intersections within the study area have been evaluated using the *Highway Capacity Manual* operations method of analysis.

An analysis of Caltrans Facilities indicates that the Proposed Project would impact the I-405 Southbound Off-Ramp/Spring Street intersection under Existing Plus Project traffic conditions. Although the intersection of Orange Avenue/I-405 southbound ramps currently and is forecast to operate at unacceptable LOS F in the AM and PM peak hour, impacts are not considered significant.

The significance impact criteria of the City of Long Beach specifies that an unsignalized intersection impact is considered to be significant if the project causes an intersection at LOS D or better to degrade to LOS E or F. Although this intersection is not considered significantly impacted, it does operate adversely under existing traffic conditions. Also, preliminary review of the existing volumes indicate that the intersection satisfies the criteria for the installation of a traffic signal. Should Caltrans or the City of Long Beach desire to install a traffic signal at this location, the Project may be expected to pay a fair-share of the total cost. With the implementation of mitigation measure **MM-TRAF-9**, the I-405 Southbound Off-Ramp/Spring Street intersection would operate at acceptable LOS conditions.

The Proposed Project would also impact the I-405 Southbound Off-Ramp/Spring Street intersection, along with I-405 Northbound Ramp/32nd Street intersection, under Year 2040 Plus Project. With the implementation of mitigation measures **MM-TRAF-9** and **MM-TRAF-14**, the I-405 Southbound Off-Ramp/Spring Street intersection and the I-405 Northbound Ramp/32nd Street intersection would operate at acceptable LOS conditions.

The mitigation measures in Section 3.11.6, Mitigation Measures (see Section 3.11, Transportation, of this Draft PEIR/PEIS) identify when the proposed improvements would fall under the authority of another jurisdiction or require additional right-of-way acquisition causing operational deficiencies or conflicts with the intent of the specific plan. All identified mitigation measures were determined to be infeasible, therefore, all impacts related to consistency with established LOS metrics are considered **significant and unavoidable**.

4.2.2 Alternatives Considered But Rejected

One of the requirements for alternatives analysis that is set forth in the State CEQA Guidelines and NEPA Guidelines is identification of alternatives that were considered by the lead agency but rejected as infeasible during the scoping process. As stated in Section 15126.6(c) of the State CEQA Guidelines, an EIR should briefly explain the reasons underlying this determination. Additionally, NEPA requires an explanation why any alternatives were eliminated from detailed analysis (40 CFR Section 1502.14(a)). Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR/EIS are:

(i) Failure to meet most of the basic project objectives,

(ii) Infeasibility, or

(iii) Inability to avoid significant environmental impacts

Section 15126.6(f)(1) of the State CEQA Guidelines states that "among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory

limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)." However, as stated in this subsection, no one of these factors establishes a fixed limit on the scope of reasonable alternatives.

In accordance with 15126.6(c) of the State CEQA Guidelines and 40 CFR 1502.14(a) of the NEPA Guidelines, alternatives were considered but rejected from further analysis due to one or more of the above reasons. A description of each alternative and the rationale for rejection is provided below.

Alternative Development Area

Section 1516.2(f)(2) of the State CEQA Guidelines states that if the lead agency concludes no feasible alternative locations exist, it must disclose the reasons for this conclusion, and should include the reasons in the EIR. Only locations that would avoid or substantially lessen any of the significant effects of the Proposed Project need be considered for inclusion in the EIR (State Guidelines § 15126.6(f)(2)(A)). In general, any development of the size and type proposed by the Proposed Project would have substantially the same impacts on air quality, GHG emissions, land use and planning, noise, population and housing, public services, and utilities and service systems. Since the City is highly urbanized, impacts to transportation would also occur in other areas of the City. Without a site-specific analysis, impacts on aesthetics, biological resources, energy geology and soils, hazards and hazardous materials, hydrology and water quality, mineral resources, and environmental justice cannot be evaluated. These impacts were found to be less than significant or less than significant with mitigation incorporated. Therefore, another location would not avoid or substantially lessen the effects of the Proposed Project. The City of Long Beach is largely built out and redevelopment in other areas of the City has potential to encounter unknown cultural and tribal cultural resources.

Additionally, per NEPA guidance, an alternative should fulfill the purpose and need of the Proposed Project. As discussed in Section 1.1, Summary and Scope of the Proposed Project, of this Draft PEIR/PEIS, the Plan Area encompasses the approximately 93-acre former Boeing aircraft manufacturing facilities, while the remainder of the Plan Area includes industrial and commercial corridors and nodes along Cherry Avenue and Spring Street. The GCSP represents the next step in the overall transition of the former Boeing C-17 Site and surrounding Plan Area. The GCSP assigns appropriate land use districts for land properties within the Plan Area, including six districts and two overlay zones. The GCSP establishes a land use and mobility plan, development regulations, design guidelines, infrastructure requirements and implementation strategies necessary to becoming a flexible commercial and industrial district in the City. Since the Proposed Project is part of the strategic planning effort for the C-17 Site closure, developing the GCSP in another area of the City is not feasible. An alternative location would not provide the planning and regulatory framework to redevelop the C-17 Site on another location. Therefore, an alternative location would not fulfill the purpose and need of the Proposed Project

4.3 ALTERNATIVES CARRIED FORWARD FOR CONSIDERATION

Pursuant to State CEQA Guidelines and NEPA requirements, the City selected a reasonable range of alternatives to the Proposed Project that would fulfill the purpose and need of the Proposed Project, feasibly attain most of the basic objectives, and avoid or substantially lessen one or more of the effects of the Proposed Project. Each of the selected alternatives is described below. Pursuant to Section 15126.6(d) of the State CEQA Guidelines and NEPA implementing regulation 40 CFR 1502.14, these descriptions include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project.

Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment, the discussion of alternatives is required to focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly. The alternatives presented below would all avoid or substantially lessen at least one of the significant impacts of the Proposed Project that have been identified in Section 3, Environmental Analysis, of this Draft PEIR/PEIS.

For the purpose of this analysis, it is assumed that all of the alternatives would comply with applicable federal, State, and local regulations, policies, and ordinances. It is also assumed that all mitigation measures required for Proposed Project implementation would apply to the Proposed Project alternatives and similar reductions in impacts would be achieved through such mitigation. Therefore, the following discussion focuses on the ability of the alternatives to further reduce Proposed Project impacts, as well as the potential impacts of the Proposed Project alternatives related to these issues.

4.3.1 Alternative 1 – No Project Alternative

Section 15126.6(e) of the State CEQA Guidelines requires that an EIR evaluate the specific alternative of "no project" along with its impact. Similarly, NEPA requires the inclusion of a "no action" alternative (40 CFR Section 1502.14(d)). As stated in this section of the State CEQA Guidelines, the purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving the project with the impacts of not approving the project. As specified in Section 15126.6(e)(3)(B) of the State CEQA Guidelines, the no project alternative for a development project consists of the circumstance under which a project does not proceed. Section 15126.6(e)(3)(B) further states that "in certain instances, the no project alternative means 'no build' wherein the existing environmental setting is maintained." Section 15126.6(e)(2) of the State CEQA Guidelines provides guidance related to establishing the existing environmental setting that is used to define the "no project" alternative. As stated in this section, "the 'no project' analysis shall discuss the existing conditions at the time the notice of preparation

is published… as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services."

Alternative 1 assumes that the environmental conditions of the Plan Area at the time that the Notice of Preparation was released (September 2018). As such, under Alternative 1, the existing uses within the Plan Area would continue to function as they currently do into the foreseeable future. As stated in Section 15126.6(e)(2) of the State CEQA Guidelines, the lead agency is required to examine conditions that are reasonably expected to occur in the foreseeable future if the Proposed Project were not approved. The "no project" alternative assumes continuation of the existing plan, policy, or operation into the future. Therefore, redevelopment within the Plan Area would continue to occur under the guidance of the existing 2019 General Plan and zoning regulations.

The Plan Area currently consists of the following zoning areas: Douglas Aircraft Planned Development District (PD-19), IG (General Industrial), IL (Light Industrial), IM (Medium Industrial), CHW (Regional Highway Commercial), CS (Commercial Storage), CCA (Community Commercial Automobile-Oriented), R-1-N (Single-Family Residential, standard lot), P (Park), I (Institutional), and PD-13 (Atlantic Aviation Center Planned Development District). The majority of the Plan Area is built out; however, redevelopment that is consistent with the applicable designation could result in an increase in intensity.

Ability to Fulfill Purpose and Need/Meet Project Objectives

Implementation of Alternative 1 would allow redevelopment to occur in accordance with the City's existing General Plan and zoning regulations. Therefore, Alternative 1 would not provide the planning and regulatory framework to guide future development of the Plan Area, following the C-17 Site closure. In order to address the economic impacts resulting from the layoff of approximately 1,600 works and other jobs within the aerospace/defense sectors, the City determined a new planning and infrastructure planning document would enhance the economic functionality of the C-17 site and surrounding area.

As such, implementation of a strategic framework, such as the GCSP would address these economic impacts. Alternative 1 would not result in the creation of a planning and regulatory framework, to address economic impacts of the C-17 site closure, and thus, would not fulfill the purpose and need for the Proposed Project.

The GCSP's combined land use and mobility plan expands mobility choices and creates a safe, efficient, balanced, and multimodal network to accommodate all travelers. The land use and mobility plan are designed to enhance connectivity through new streets and pathways and expand mobility choices through multimodal street improvements. The GCSP involves the implementation of new streets and pedestrian connectors, which would be installed by developers

incrementally as parcels are developed. Streets within the GCSP are divided into four street classifications and a pathway system: Major Avenue, Minor Avenue, Neighborhood Connector, Local Street, and Pedestrian Connection. Street classifications are consistent with the General Plan Mobility Element. The Pedestrian Connection typology represents pathways providing pedestrian/bicycle access through parcels. Improvements to existing streets and the design of new streets are important aspects of the GCSP. Bicycle facilities are proposed for Cherry Avenue, Wardlow Road, and all new streets in the Plan Area to help improve connectivity within the plan area and connect to existing bicycle infrastructure within the vicinity of the plan area, strengthening Long Beach's commitment to be the nation's most bicycle-friendly city.

Alternative 1 does not include this planning and regulatory framework to guide land use and transportation infrastructure improvements called for in the General Plan Mobility Element, General Plan Land Use Element, and California Complete Streets Act of 2008. As such, Alternative 1 would not be fully consistent with the infrastructure improvements identified in the General Plan Mobility Element, General Plan Land Use Element, and California Complete Streets Act of 2008. The Proposed Project's enhancement of connectivity of streets and bicycle infrastructure would be consistent with applicable mobility planning for the City and State, Therefore, Alternative 1 would not fulfill the purpose and need or meet project objectives related to the need for comprehensive planning that addresses land use, economic development, and infrastructure (multimodal) improvements.

Additionally, none of Proposed Project objectives would be achieved under this alternative. Although the current City guidance provides some guidance for future redevelopment, it does not give equal consideration to the number of jobs lost as a result of the Boeing C-17 Site closure. The principal driver of the Proposed Project is stimulating economic development and job growth. Alternative 1 would not create development regulations for the Plan Area to create a 21st century employment district that fosters innovation and cultivates the existing human capital of Long Beach. In addition, continuation of the existing policies and plans would not allow for the establishment of Cherry Avenue as a multimodal unifying corridor to the extent as proposed under the GCSP. Further, there would be no enhancement of internal connectivity and increase in mobility options within the Plan Area.

Nonetheless, CEQA and NEPA require an evaluation of the "no project"/ "no action" alternative so that decision makers can compare the impacts of approving the project with the impacts of not approving the project. As such, the purpose of Alternative 1 is to provide sufficient comparison of environmental resources between the "no project" or "no action" alternative with the Proposed Project.

Comparison of the Effects of Alternative 1 to the Proposed Project

Aesthetics

Under Alternative 1, future redevelopment within the Plan Area could result in a change to the existing visual character. Similar to the Proposed Project, any new redevelopment under Alternative 1 would be designed in accordance with applicable development strategies, policies, and standards. Unlike the Proposed Project, Alternative 1 would not include development standards and design guidelines to unify the Plan Area through six development districts and two overlay zones. Additionally, Alternative 1 would not preserve visual corridors along major and minor streetscapes through the six development districts and two overlay zones. Alternative 1 would have similar light and glare impacts, and would comply with applicable City development and design standards. Overall, aesthetic impacts associated with Alternative 1 would be greater than the Proposed Project.

Air Quality

This alternative would allow for redevelopment to occur within the Plan Area in accordance with the existing General Plan and zoning regulations. Thus, redevelopment could result in an increase in intensity and would substantially increase emissions of criteria air pollutants from construction and operational activities. The redevelopment could also result in construction and greater operational emissions near sensitive receptors. However, under Alternative 1, it is unlikely the 93-acre C-17 Site would be redeveloped as new Business Park District because the current zoning is Douglas Aircraft Planned Development District (PD-19). Thus, the maximum construction and operational emissions associated with this portion of the Plan Area would be reduced as compared to the Proposed Project. As such, no significant and unavoidable air quality impacts would occur under Alternative 1. Therefore, impacts under Alternative 1 would be less than the Proposed Project.

Cultural Resources

New development under the current zoning could impact the same properties that would be impacted under the Proposed Project. Therefore, as with the Proposed Project, redevelopment under Alternative 1 could result in an impact on known and/or unknown cultural resources. However, under Alternative 1, it is unlikely the 93-acre C-17 Site would be redeveloped as new Business Park District because the current zoning is Douglas Aircraft Planned Development District (PD-19). Thus, the maximum construction and potential for demolition of eligible historic structures associated with the Plan Area would be reduced as compared to the Proposed Project. Under Alternative 1 and the Proposed Project, potential impacts to cultural resources would be significant with mitigation if historic-age structures are demolished and/or modified. Therefore, cultural resources impacts under this alternative would be less than those of the Proposed Project.

Greenhouse Gas Emissions

Under Alternative 1, redevelopment could occur that is consistent with existing General Plan regulations and zoning. As such, Alternative 1 would result in GHG emissions associated with new construction and potential increases in operational activities. Additionally, Alternative 1 would not implement a number if beneficial elements that would occur under the Proposed Project, including the Proposed Project's objective related to multimodal transportation However, due to the restrictive zoning regulations of the existing 93-acre C-17 Site, it is unlikely that this area would be redeveloped, and as such, would remain vacant. This alternative would not produce any construction or operational GHG emissions on the C-17 Site. As such, no significant and unavoidable impacts would occur under Alternative 1. Therefore, impacts under Alternative 1 would be less than the Proposed Project.

Hazards and Hazardous Materials

Redevelopment in accordance with the existing zoning within the Plan Area would result in similar impacts related to the presence of known or suspected on-site contamination. As with the Proposed Project, future redevelopment under Alternative 1 has the potential to encounter contaminated soils during grading activities and/or the potential to release asbestos-containing materials and lead based paint during demolition. Impacts under Alternative 1 would be, as is the case with the Proposed Project, less than significant with mitigation incorporated. Therefore, the overall impacts under Alternative 1 are similar to the Proposed Project.

Hydrology and Water Quality

Redevelopment under Alternative 1 could alter existing drainage patterns and the amount of runoff coming from the Plan Area. Short-term construction and long-term operational water quality impacts would be similar to the Proposed Project and would similarly be required to comply with the Construction General Permit and the City's MS4 Permit. However, since Alternative 1 would not implement an infrastructure plan for the entire Plan Area, drainage improvements that would occur under the Proposed Project would not occur under Alternative 1. Overall, hydrology and water quality impacts would be greater under Alternative 1, as compared to the Proposed Project.

Land Use and Planning

Given that the GCSP would not be adopted under Alternative 1, a Zoning Code Amendment would not be required. The existing zoning designations of the Plan Area would remain, and redevelopment would occur consistent with the City's General Plan land use and zoning designations. However, Alternative 1 would not implement a number of beneficial elements that would occur under the Proposed Project, including enhancements to the Cherry Avenue corridor, design guidelines promoting quality design, complete street networks, and development in accordance with a unified specific plan.

Most notably, Alternative 1 would result in employment growth less than the horizon year jobs projected by SCAG, therefore, contributing to the job-poor status of the City of Long Beach. Alternative 1 would also fall short of the job generation goals of the 2019 General Plan Land Use Element. The jobs-poor status of the City could thereby result in increased vehicle commuting due to residents traveling out of the City for employment. Overall, land use impacts would be greater under Alternative 1 when compared to the Proposed Project.

Noise

Under Alternative 1, redevelopment within the Plan Area would continue to occur as permitted by the City's General Plan and existing zoning regulations. Redevelopment could result in construction noise, as would occur under the Proposed Project. Additionally, intensification of redevelopment could increase stationary on-site noise and off-site traffic noise. However, due to the restrictive zoning regulations of the existing 93-acre C-17 Site, it is unlikely that this area would be redeveloped, and as such, would remain vacant. Therefore, tis alternative would likely not produce any construction or operational noise on the C-17 Site. Therefore, impacts under Alternative 1 would be less when compared to the Proposed Project.

Population and Housing

Under Alternative 1, redevelopment within the Plan Area would continue to occur as permitted by the City's General Plan and existing zoning regulations. Similarly as with the Proposed Project, Alternative 1 would likely result in population and employment growth, to a lesser degree than the job growth under the Proposed Project. Alternative 1 would fall short of the job generation goals of the 2019 General Plan Land Use Element and SCAG plan projections for the horizon year, therefore, resulting in increased vehicle commuting due to the job-poor status of City of Long Beach. The Proposed Project does not propose housing, and the majority of the Plan Area is built out with industrial, commercial, and retail uses. As with the Proposed Project, impacts would be less than significant under Alternative 1, but this alternative would be inconsistent with SCAG policies regard to improving the jobs ratio goals for the City of Long Beach. Therefore, impacts are similar when compared to the Proposed Project, but the job-poor status of the City of Long Beach would be worse under Alternative 1, as compared to the Proposed Project.

Public Services

Under Alternative 1, redevelopment within the Plan Area would continue to occur as permitted by the City's General Plan and existing zoning regulations. As with the Proposed Project, an increase in development intensity, as permitted, would result in an increase in fire and police protection services. However, as with the Proposed Project, impacts would be less than significant. Nonetheless, given the Plan Area is largely built out, it is unlikely that redevelopment would increase the demand for public services. Therefore, impacts under Alternative 1 would be similar to the Proposed Project.

Transportation

Redevelopment under Alternative 1 would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system; however, unlike the Proposed Project, Alternative 1 would not increase multimodal transportation. The existing zoning in the Plan Area does not include the design guidelines, infrastructure enhancements, or a cohesive mobility plan that would facilitate the bicycle and pedestrian improvements on Cherry Avenue, Spring Street, and Orange Avenue that are specifically designated in the Mobility Element and Bike Master Plan. The Bicycle Master Plan identifies Backbone Next Step Facilities, which would stretch across the City from the northern border to the southern border, as well as the eastern border to the western border. The Orange Avenue Backbone Project would add 4 miles of Class IV parking protected bike lanes that will close network gaps, and improve existing infrastructure throughout Orange and Alamitos Avenues improving safety, mobility, multi – modal connectivity and equality for bicyclist of all ages and abilities (8-80). Additionally, Spring Street has been identified as a Backbone Next Step Facility.

The Proposed Project would set forth a Mobility Plan to allow for the bicycle improvements called out in the Mobility Element. Under Alternative 1, the existing zoning would not facilitate the bike improvements proposed in the Bicycle Master Plan, and thus, would not reduce vehicle miles traveled (VMT). Therefore, without the facilitation of these multimodal infrastructure improvements, buildout of the specific plan area under existing zoning would not provide bicycle and pedestrian facilities aimed at reducing VMT, as contemplated in the 2019 General Plan Land Use Element.

As further discussed in Section 3.11, Transportation, of this Draft PEIR/PEIS, the Year 2040 Baseline traffic projections account for an increase in existing traffic volumes due to overall regional growth, based on historical rates of growth identified in the CMP. Thus, should the Proposed Project not receive approval, and redevelopment within the Plan Area occurs consistent with existing regulations, the Year 2040 Baseline condition is representative of Alternative 1. Under the Year 2040 Baseline traffic conditions, 3 of the 26 key study intersections (Orange Avenue at Spring Street, Redondo Avenue at Spring Street, and Orange Avenue at Willow Street) are forecast to operate at a deficient LOS. The Year 2040 plus Project traffic conditions would result in a significant impact at 16 of the key study intersections, including the key intersections forecast to operate at a deficient LOS under Year 2040 Baseline traffic conditions. Although Alternative 1 would not impact all 16 key study intersections, this alternative would not eliminate significant and unavoidable impacts to three intersections (Orange Avenue at Spring Street, Redondo Avenue at Spring Street, and Orange Avenue at Willow Street). Nonetheless, Alternative 1 would result in an impact at fewer key intersections. Therefore, overall transportation impacts under Alternative 1 would be less when compared to the Proposed Project.

Tribal Cultural Resources

New development under the current zoning could impact the same properties that would be impacted under the Proposed Project. Therefore, as with the Proposed Project, development under Alternative 1 could result in an impact on known and/or unknown tribal cultural resources. Under Alternative 1 and the Proposed Project, potential impacts to tribal cultural resources would be significant without mitigation. As such, tribal cultural resource impacts under Alternative 1 would be similar to those of the Proposed Project, and as such, would be less than significant with mitigation incorporated. Therefore, tribal cultural resource impacts under Alternative 1 would be similar when compared to the Proposed Project.

Utilities and Service Systems

Under Alternative 1, redevelopment could result in an increase in development intensity compared to the existing condition. The increased intensity could lead to an increase in wastewater, runoff, water demand, and generation of solid waste. Therefore, impacts to utilities and service systems under Alternative 1 would be similar to the Proposed Project, and as such, would be less than significant.

Environmental Justice

Under Alternative 1, development within the Plan Area would continue to occur as permitted by the City's General Plan and existing zoning regulations. As discussed in Section 3.14, Environmental Justice, of this Draft PEIR/PEIS, the neighborhood adjacent to the Plan Area is not considered a minority or low-income population. As is the case with the Proposed Project, any environmental impacts resulting from redevelopment would not disproportionately impact minority or low-income populations. Therefore, the overall impacts under Alternative 1 would be similar to those of the Proposed Project, and as such, would be less than significant.

Comparison of Environmental Impacts

Unlike the Proposed Project, Alternative 1 would not include development standards and design guidelines to unify the Plan Area through six development districts and two overlay zones. As such, Alternative 1 would result in greater impacts related aesthetics, hydrology and water quality, and land use and planning. Under Alternative 1, it is unlikely the 93-acre C-17 Site would be redeveloped as new Business Park District because the current zoning is Douglas Aircraft Planned Development District (PD-19). Thus, the maximum construction and operational emissions associated with this portion of the Plan Area would be reduced as compared to the Proposed Project. Thus, Alternative 1 would have fewer environmental impacts associated with air quality, greenhouse gas emissions, noise, and transportation and traffic. Nonetheless since some redevelopment could occur under Alternative 1, development impacts would be similar with the Proposed Project as related to cultural

resources, hazards and hazardous materials, population and housing, public services, tribal cultural resources, utilities and service systems, and environmental justice.

4.3.2 Alternative 2 – Reduced Project Alternative

Alternative 2 would allow for the same proposed land use designations within the GCSP. However, Alternative 2 represents a Reduced Project Alternative by reducing the development potential from 8,906,403 square feet to 5,245,331 square feet. A comparison of the overall buildout summaries of Alternative 2 and the Proposed Project is provided in Table 4-1.

Table 4-1
Development Potential Comparison

Land Uses	Development Potential (square feet)	
	Alternative 2	*Proposed Project*
General Office	1,502,134	1,872,602
Medical Office	53,016	146,095
R&D	212,065	234,651
Manufacturing	2,397,684	1,131,139
Light Industrial/Warehousing	600,669	4,455,892
Retail	371,763	795,457
Restaurant	17,000	107,623
Hotel	91,000	162,944
Total	**5,245,331**	**8,906,403**

Ability to Fulfill Purpose and Need/Meet Project Objectives

Alternative 2 would provide a framework for the development and improvement of the 437-acre Plan Area. Additionally, Alternative 2 would assign appropriate land use districts for land properties within the Plan Area, including six development districts and two overlay zones. Similar to the GCSP, Alternative 2 establishes a land use and mobility plan, development regulations, design guidelines, infrastructure requirements, and implementation strategies necessary to becoming a flexible commercial and industrial district in the City. As such, Alternative 2 would implement a strategic framework to address the economic impacts associated with the C-17 Site closure, and thus, would fulfill the purpose and need for the Proposed Project as required by CEQA and NEPA.

Additionally, Alternative 2 would help meet most of the objectives identified for the Proposed Project. Specifically, Alternative 2 would create a 21st century employment district through guiding development within the Plan Area. Additionally, Alternative 2 would stimulate economic development and growth, and cultivate existing human capital in Long Beach, through

redevelopment of the former Boeing C-17 manufacturing plant. However, given the reduction in development potential, Alternative 2 would not fully meet the economic objectives of the Proposed Project. Finally, Alternative 2 would also implement a mobility plan to establish Cherry Avenue as a multimodal unifying corridor and increase mobility choices throughout the Plan Area.

Comparison of the Effects of Alternative 2 to the Proposed Project

Aesthetics

Under Alternative 2, the density and intensity of development would be reduced. Given less redevelopment would occur, this alternative would result in fewer changes to the existing visual character compared to the Proposed Project. Although buildout intensity would be less, height standards, setbacks, and design guidelines would still apply. The light and glare impacts under Alternative 2 are similar to the Proposed Project and would be typical of low- and mid-rise industrial, and commercial/retail land uses in the region and City. Therefore, impacts under Alternative 2 would be similar when compared to the Proposed Project.

Air Quality

Under Alternative 2, the reduction in development potential would require less construction activity than the Proposed Project. With the reduction in construction under Alternative 2, there would be less construction-related criteria air pollutant emissions and fewer construction-related air quality impacts. However, as shown on Table 3.2-10 (see Section 3.2, Air Quality, of this Draft PEIR/PEIS), estimated Proposed Project emissions would exceed the SCAQMD thresholds for VOC, NO_x, and PM_{10}. Given, the Proposed Project is exceedingly over the SCAQMD thresholds for VOC and NO_x, it is likely that Alternative 2 would also result in significant and unavoidable impacts related to these emissions during construction.

Alternative 2 would represent a decrease in development potential from 8,906,403 square feet to 5,245,331 square feet. As such, this alternative would have fewer trips, resulting in a reduction in mobile source emissions. Alternative 2 would generate fewer area and energy source emissions than the Proposed Project due to the reduction in building space. Similar to the Proposed Project, Alternative 2 would also meet regulatory energy efficiency requirements through redevelopment. However, as shown on Table 3.2-11 (see Section 3.2, Air Quality, of this Draft PEIR/PEIS), the Proposed Project is exceedingly over the SCAQMD thresholds for VOC, NO_x, CO, PM_{10}, and $PM_{2.5}$. Therefore, although Alternative 2 would reduce source emissions, the emissions would also result in significant and unavoidable air quality impacts. Therefore, the air quality impacts under Alternative 2 would be similar to those created by the Proposed Project

Cultural Resources

Construction activities for Alternative 2 would be reduced from those created by the Proposed Project, due to the decrease in new construction area. The development potential would be reduced from 10,888,122 square feet to 5,245,331 square feet. However, new development could impact the same properties that would be impacted under the Proposed Project. Therefore, as with the Proposed Project, redevelopment under Alternative 2 could result in an impact on known and/or unknown cultural resources. Under Alternative 2 and the Proposed Project, potential impacts to cultural resources would remain significant with mitigation due to the potential for demolition of historic resources. Therefore, cultural resources impacts under Alternative 2 would be similar to those created by the Proposed Project, and as such, would be significant and unavoidable.

Greenhouse Gas Emissions

Under Alternative 2, the reduction in development potential would require less construction activity than the Proposed Project. With the reduction in construction under Alternative 2, there would be less construction-related GHG emissions and fewer construction-related GHG impacts. Additionally, this reduction in development potential would decrease emissions sources associated with the operation of future development. Alternative 2 would have fewer trips, resulting in a reduction in mobile source emissions. Alternative 2 would generate fewer area energy, solid waste, water supply, and wastewater source emissions than the Proposed Project due to the overall reduction in proposed building area. However, as shown in Table 3.4-3 (see Section 3.4, Greenhouse Gas Emissions, of this Draft PEIR/PEIS), the net change in emissions from the existing scenario to the Proposed Project is estimated to be 92,724 MT CO_2e per year. Given, the Proposed Project's GHG emissions are exceedingly over the SCAQMD threshold of 3,000 MT CO_2e per year, it is likely that Alternative 2 would also result in significant and unavoidable impacts related to GHG emissions. Therefore, the overall GHG emissions impacts under Alternative 2 would be similar to the Proposed Project.

Hazards and Hazardous Materials

Hazards and hazardous materials impacts would be reduced under Alternative 2 when compared to the Proposed Project due to the reduction in overall development and duration of construction activities. However, as with the Proposed Project, future redevelopment under Alternative 2 has the potential to encounter contaminated soils during grading activities and/or the potential release of asbestos-containing materials and lead based paint during demolition. Any remediation and or demolition would be required to comply with the appropriate standards and guidelines of the responsible agency. Nonetheless, under Alternative 2 and the Proposed Project, potential impacts related to hazards and hazardous materials would be significant without mitigation. Thus, both Alternative 2 and the Proposed Project would require mitigation. Impacts under Alternative 2 would be, as is the case

with the Proposed Project, less than significant with mitigation incorporated. Therefore, impacts under Alternative 2 are similar to the Proposed Project.

Hydrology and Water Quality

Redevelopment under Alternative 2 could alter existing drainage patterns and the amount of runoff coming from the Plan Area. Short-term construction and long-term operational water quality impacts would be similar to the Proposed Project and would similarly be required to comply with the Construction General Permit and the City's MS4 Permit. Under Alternative 2 and the Proposed Project, an infrastructure plan would guide drainage improvement plans for the Plan Area. Although both Alternative 2 and the Proposed Project would result in less than significant impacts with mitigation, Alternative 2 would result in fewer alterations to the existing drainage patterns within the Plan Area due to the reduction in overall development area. Therefore, the overall impacts under Alternative 2 would be less than the Proposed Project. ***Land Use and Planning***

Under Alternative 2, implementation of the GCSP would occur, but with a reduction in the overall development potential. Similar to the Proposed Project, Alternative 2 would require a Zoning Code Amendment. Most notably, Alternative 2 would result in employment growth less than the horizon year jobs projected by SCAG, therefore, contributing to the job-poor status of the City of Long Beach. Alternative 2 would also fall short of the job generation goals of the 2019 General Plan Land Use Element. The jobs-poor status of the City could thereby result in increased vehicle commuting due to residents traveling out of the City for employment. Due to the significant job loss that resulted in the area from closure of the C-17 Site, which is evident by the number of manufacturing jobs lost from 2010 to 2016, the new jobs created by the GCSP would likely be replacing those that were lost in the area due to closure of the C-17 site. The Project's estimated 7,880 additional jobs would be consistent with SCAG's employment forecasts for the City. Alternative 2 would fall short of the job generation goals of the Land Use Element and SCAG plans, as compared to the Proposed Project.

Alternative 2 would implement a number of beneficial elements that would also occur under the Proposed Project, including enhancements to the Cherry Avenue corridor, design guidelines promoting quality design, complete street networks, and development in accordance with a unified specific plan. With the reduction in overall buildout potential, impacts would be less than significant under Alternative 2, but this alternative would be inconsistent with SCAG and 2019 General Plan policies regard in job generation in the City of Long Beach. Therefore, impacts related to consistency with the City of Long Beach General Plan and SCAG plans would be generally worse under Alternative 2, as compared to the Proposed Project.

Noise

Under Alternative 2, construction and operational noise impacts would be reduced because of the reduction in overall development potential. Similar to the Proposed Project, Alternative 2 would have potentially significant construction and operational noise impacts without the incorporation of mitigation. Nonetheless, the overall reduction in building construction would reduce the length of potential construction under Alternative 2. Additionally, the reduction in square footage would reduce off-site traffic noise impacts, and on-site operational noise impacts. Therefore, the overall noise impacts under Alternative 2 would be less when compared to the Proposed Project.

Population and Housing

Alternative 2 would reduce the development potential from 8,906,403 square feet to 5,245,331 square feet. As such, Alternative 2 would result in fewer employees at full build out of the Plan Area as compared to the Proposed Project. Similarly, as with the Proposed Project, Alternative 2 would likely result in population and employment growth less than the horizon year jobs projected by SCAG. Alternative 2 would fall short of the job generation goals of the 2019 General Plan Land Use Element and SCAG plan projections for the horizon year, therefore, resulting in increased vehicle commuting due to the job-poor status of City of Long Beach. As with the Proposed Project, impacts would be less than significant under Alternative 2, but this alternative would be inconsistent with SCAG policies regard in jobs ratio goals for the City of Long Beach. Therefore, impacts related to the job-poor status of the City of Long Beach would be worse under Alternative 2, as compared to the Proposed Project.

Public Services

Under Alternative 2, the development potential would be reduced from 8,906,403 square feet to 5,245,331 square feet. Similarly, as with the Proposed Project, an increase in development intensity, as permitted, would result in an increase in fire and police protection services. However, as with the Proposed Project, impacts would be less than significant. Nonetheless, given that the Plan Area is largely built out, it is unlikely that redevelopment would increase the demand for public services. Therefore, the overall impacts to public services under Alternative 2 would be similar when compared to the Proposed Project.

Transportation

The Proposed Project would set forth a Mobility Plan to allow for the bicycle improvements called out in the Mobility Element. Under Alternative 2, land use designations would facilitate the bike improvements proposed in the Bicycle Master Plan, and thus, would reduce vehicle miles traveled (VMT), as would occur under the Proposed Project. Therefore, Alternative 2 would facilitate these multimodal infrastructure improvements, buildout of the specific plan area under existing zoning

would not provide bicycle and pedestrian facilities aimed at reducing VMT, as contemplated in the 2019 General Plan Land Use Element.

As further discussed in Section 3.11, Transportation, of this Draft PEIR/PEIS, compared to the Proposed Project, the buildout projections under Alternative 2 is approximately 54% less. As such, Alternative 2 would represent a significant decrease compared to the Proposed Project's peak hour trips compared to the existing condition. Although Alternative 2 would be less impactful at the key study intersections, additional trips would be added to the transportation system that could result in the similar degradation of level of service (LOS) at intersections in the Plan Area. While less trips would be added under Alternative 2, this reduced project would substantially increase the number of trips in the Plan Area compared to existing conditions. Existing intersection conditions would approach or exceed the maximum capacity under Alternative 2, similar to the Proposed Project.

Alternative 2 would result in fewer non-residential land uses. Therefore, VMT per existing resident in the City would likely be greater due to the need to commute further for jobs. Therefore, impacts related to the VMT of the City of Long Beach would be worse under Alternative 2, as compared to the Proposed Project. Overall impacts to LOS in the plan area under Alternative 2 would be similar than those identified under the Proposed Project.

Tribal Cultural Resources

Construction activities under Alternative 2 would be reduced from those created by the Proposed Project, due to the decrease in overall new construction area. The development potential would be reduced from 8,906,403 square feet to 5,245,331 square feet. However, as with the Proposed Project, development under Alternative 2 could result in an impact on known and/or unknown tribal cultural resources. Under Alternative 2 and the Proposed Project, potential impacts to tribal cultural resources would be significant without mitigation. As such, the tribal cultural resource impacts under Alternative 2 would be similar to those created by the Proposed Project, and would be less than significant with mitigation incorporated. Therefore, the overall tribal cultural resource impacts under Alternative 2 would be similar to the Proposed Project.

Utilities and Service Systems

Under Alternative 2, impacts on utilities and service systems would be reduced when compared to the Proposed Project, due to the decrease in overall development potential. The reduction in development would result in a decreased demand in water, natural gas, and electricity supply, as well as decreased generation of wastewater and solid waste in the overall Plan Area. Therefore, utilities and service systems impacts under Alternative 2 would be less when compared to the Proposed Project.

Environmental Justice

Under Alternative 2, the development potential would be reduced from 8,906,403 square feet to 5,245,331 square feet. As discussed in Section 3.14, Environmental Justice, of this Draft PEIR/PEIS, the neighborhood adjacent to the Plan Area is not considered a minority or low-income population. As is the case with the Proposed Project, any environmental impacts resulting from redevelopment would not disproportionately impact minority or low-income populations under Alternative 2. Therefore, the overall impacts under Alternative 2 would be similar to the Proposed Project, and as such, would be less than significant.

Comparison of Environmental Impacts

Under Alternative 2, the density and intensity of development would be reduced. Given less redevelopment would occur, Alternative 2 would result in reduced impacts associated with hydrology and water quality, noise, transportation, and utilities and service systems. Nonetheless, Alternative 2 would result in the construction of new land uses and implement similar design guidelines, and thus, impacts would similar in regards to aesthetics, air quality, cultural resources, greenhouse gas emissions, hazards and hazardous materials, land use and planning, population and housing, public services, tribal cultural resources, and environmental justice.

4.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE/ PREFFERED ALTERNATIVE

4.4.1 Environmentally Superior Alternative

An EIR must identify an "environmentally superior" alternative; and, where the no project alternative is environmentally superior, the EIR is then required to identify an alternative from among the others evaluated as environmentally superior (14 CCR 15126.6(e)(2)). NEPA also requires that in cases where an EIS is prepared, the Record of Decision must specify the alternative or alternatives which were found to be environmentally preferable to the biological and physical environment and that will promote the national environmental policy as expressed in NEPA's Section 101 (40 CFR 1505.2(b)). In this document, the term "environmentally superior" is used to satisfy both CEQA and NEPA requirements.

With respect to identifying an Environmentally Superior Alternative among those analyzed in this PEIR/PEIS, the range of feasible Alternatives includes: Alternative 1, No Project Alternative and Alternative 2, Reduced Project Alternative. A comparative summary of the environmental impacts associated with each alternative is provided in Table 4-2, Comparison of Impacts.

As shown, Alternative 1, the No Project Alternative, would be the environmentally superior alternative, as it would result in no new environmental impacts and would avoid the Proposed Project's significant and unavoidable impacts related to air quality, cultural resources, GHG emissions, and transportation/traffic. Although the No Project Alternative would result in a greater number of reduced environmental impacts, Section 15126.6(e)(2) of the State CEQA Guidelines indicates that if the environmentally superior alternative is the no project alternative, the EIR shall also identify another environmentally superior alternative among the other alternatives.

The remaining alternative, Alternative 2, was reviewed in accordance with the State CEQA Guidelines requirements. Alternative 2 would lessen the significant and unavoidable impacts related to air quality, cultural resources, GHG emissions, and transportation; however, impacts related to air quality, cultural resources, and GHG emissions, and transportation would remain significant and unavoidable. Additionally, Alternative 1, would not result in the creation of a planning and regulatory framework, to address economic impacts of the C-17 site closure, and thus, would not fulfill the purpose and need for the Proposed Project. Additionally, none of Proposed Project objectives would be achieved under Alternative 1. Comparatively, Alternative 2 would implement a strategic framework to address the economic impacts associated with the C-17 Site closure, and thus, would fulfill the purpose and need for the Proposed Project. Additionally, Alternative 2 would help meet most of the objectives identified for the Proposed Project. Therefore, the environmentally superior alternative is Alternative 2.

Table 4-2
Comparison of Impacts

Impact Area	Proposed Project	Alternative 1 (No Project)	Alternative 2
Aesthetics	Less than significant	Greater	Similar
Air Quality	**Significant and unavoidable**	**Less**	Similar
Cultural Resources	Significant and unavoidable	Less	Similar
Greenhouse Gas Emissions	**Significant and unavoidable**	**Less**	Similar
Hazards and Hazardous Materials	Less than significant with mitigation	Similar	Less
Hydrology and Water Quality	Less than significant	Greater	Less
Land Use and Planning	Less than significant	Greater	Similar
Noise	Less than significant with mitigation	Less	Less
Population and Housing	Less than significant	Similar	Similar
Public Services	Less than significant	Similar	Similar
Transportation	**Significant and unavoidable**	**Less**	**Similar**
Tribal Cultural Resources	Less than significant with mitigation	Similar	Similar
Utilities and Service Systems	Less than significant	Similar	Similar
Environmental Justice	Less than significant	Similar	Similar

Bold for environmental resource categories where the Proposed Project would result in a significant and unavoidable impact following implementation of all feasible mitigation.

4.4.2 Preferred Alternative

Under NEPA implementing regulation 40 CFR Section 1502.14(e), the lead agency is required to identify the agency's preferred alternative in the Draft EIS if a preferred alternative is known at the time of the Draft EIS. Pending public comment on the Draft PEIR/PEIS, the City's preferred alternative at the time of the Draft PEIS is the Proposed Project. The identification of a preferred alternative does not constitute a commitment or decision, and there is no requirement to select the preferred alternative in the record of decision. The identification of the preferred alternative may change between a Draft PEIR/PEIS and Final PEIR/PEIS. Various parts of separate alternatives that are analyzed in the draft can also be "mixed and matched" to develop a complete alternative in the Final EIS as long as the reasons for doing so are explained. Selection in the record of decision of an alternative other than the preferred alternative does not require preparation of a supplemental EIS.

CHAPTER 5.0
OTHER CEQA REQUIREMENTS

5.1 SIGNIFICANT UNAVOIDABLE ENVIRONMENTAL IMPACTS

This section is prepared in accordance with Section 15126.2(b) of the State CEQA Guidelines, which requires the discussion of any significant environmental effects that cannot be avoided if a project is implemented. These include impacts that can be mitigated, but cannot be reduced to a less than significant level. An analysis of environmental impacts caused by the Proposed Project has been conducted and is contained in this PEIR/PEIS. Fifteen issue areas were analyzed in detail in Chapter 3.0, Environmental Analysis. According to the environmental impact analysis presented in Chapter 3.0, the Proposed Project would result in significant and unavoidable adverse impacts to air quality (refer to Section 3.2, Air Quality, of this Draft PEIR/PEIS), cultural resources (refer to Section 3.3, Cultural Resources, of this Draft PEIR/PEIS), greenhouse gas emissions (refer to Section 3.4, Greenhouse Gas Emissions, of this Draft PEIR/PEIS), and Transportation (refer to Section 3.11, Transportation, of this Draft PEIR/PEIS).

The reason why the Globemaster Corridor Specific Plan (GCSP; Proposed Project) is being considered, notwithstanding the potential significant unavoidable adverse impacts, are related to the project objectives described in Section 2.5, Project Objectives, of this Draft PEIR/PEIS. As indicated, the Proposed Project is being proposed to create a 21st century employment district that fosters innovation; stimulate economic development and job growth to replenish jobs lost from the closure of the former Boeing C-17 manufacutring plant; cultivate the existing human capital of Long Beach; establish Cherry Avenue as a multimodal unifying corridor; and increase mobility choices throughout the Globemaster Corridor District.

5.1.1 Air Quality

As discussed in Section 3.2, Air Quality, of this Draft PEIR/PEIS the Proposed Project would result in significant and unavoidable air quality impacts with regard to violating an air quality standard, resulting in a cumulatively considerable net increase in a criteria pollutant and exposing sensitive receptors to substantial pollutant concentrations.

Conflict with Air Quality Management Plan

The Proposed Project would potentially result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, and would potentially conflict with Consistency Criterion No. 1. Implementation of the Proposed Project would be not exceed the demographic growth forecasts in the Southern California Association of Governments (SCAG) 2016 Regional Transportation Plan/Sustainable Communities Survey (RTP/SCS); therefore, the Proposed Project would be consistent with the South Coast Air Quality Management District

(SCAQMD) 2016 Air Quality management Plan (AQMP), which based future emission estimates on the SCAG 2016 RTP/SCS. Thus, the Proposed Project would not conflict with Consistency Criterion No. 2. However, because the Proposed Project would potentially conflict with Consistency Criterion No. 1, impacts related to the Proposed Project's potential to conflict with or obstruct implementation of the applicable air quality plan is considered potentially significant and mitigation is required. Mitigation measures **MM-AQ-1** (Construction Equipment Emissions Reductions), **MM-AQ-2** (Fugitive Dust Control)[1], and **MM-AQ-3** (Architectural Coating VOC Emissions) would be required to reduce Proposed Project construction-related emissions and mitigation measures **MM-AQ-4** (Vehicle Miles Traveled Reduction Strategies), **MM-AQ-5** (Encourage Electric Vehicles), **MM-AQ-6** (Idling Restriction), **MM-AQ-7** (Energy Conservation), **MM-AQ-8** (Low-VOC-Green Cleaning Product Education Program), **MM-AQ-9** (Electric Forklifts), and **MM-AQ-10** (TRU Plug-Ins) would be required to reduce emissions generated during operation of the Proposed Project. Mitigation measure **MM-AQ-1** would reduce various air pollutant emissions associated with construction equipment operation. Mitigation measure **MM-AQ-2** would reduce dust-related PM_{10} and $PM_{2.5}$ emissions generated during construction and mitigation measure **MM-AQ-3** would reduce VOC emissions generated the application of architectural coating during construction. Mitigation measures **MM-AQ-4**, **MM-AQ-5**, and **MM-AQ-6** aim to reduce operational mobile source emissions of various air pollutants. Mitigation measure **MM-AQ-7** focuses on reducing energy-related operational emissions and mitigation measure **MM-AQ-8** encourages reduction of operational area source VOC emissions. Mitigation measure **MM-AQ-9** would reduce criteria air pollutants by replacing diesel-fueled forklifts with electric forklifts and mitigation measure **MM-AQ-10** would reduce criteria air pollutants generated by TRU idling. Nonetheless, even with the implementation of mitigation, due to the magnitude of emissions associated with buildout of the Proposed Project, potential impacts would remain **significant and unavoidable** under CEQA, and potential effects would remain **adverse** under NEPA.

Cumulatively Considerable Net Increase of Nonattainment Criteria Air Pollutants

Because construction specifications are not currently available, under a conservative scenario where maximum emissions from each assessed construction phase would occur concurrently, estimated Proposed Project emissions would exceed the SCAQMD thresholds for VOC and NO_x. Emissions of CO, SO_x, $PM_{10,}$ and $PM_{2.5}$ are not estimated to exceed SCAQMD thresholds. The implementation of mitigation measures **MM-AQ-1** through **MM-AQ-3** would be required to reduce Proposed Project construction-related emissions. As described previously, mitigation measure **MM-AQ-1** would reduce various air pollutant emissions associated with construction equipment operation, mitigation measure **MM-AQ-2** would reduce dust-related PM_{10} and $PM_{2.5}$ emissions generated during construction (even though estimated Proposed Project mass daily

[1] Even though estimated Proposed Project mass daily emissions do not exceed the $PM_{10,}$ and $PM_{2.5}$.

emissions do not exceed the $PM_{10,}$ and $PM_{2.5}$), and mitigation measure **MM-AQ-3** would reduce VOC emissions generated the application of architectural coating during construction. Nonetheless, even with the implementation of mitigation, Proposed Project-generated construction criteria air pollutant emissions would remain **significant and unavoidable**, under CEQA, and potential effects would remain **adverse** under NEPA.

During operations, Proposed Project-generated VOC, CO, and PM_{10} would exceed the SCAQMD thresholds. Mitigation measures **MM-AQ-4** (Vehicle Miles Traveled Reduction Strategies), **MM-AQ-5** (Encourage Electric Vehicles), **MM-AQ-6** (Idling Restriction), **MM-AQ-7** (Energy Conservation), **MM-AQ-8** (Low-VOC-Green Cleaning Product Education Program), **MM-AQ-9** (Electric Forklifts), and **MM-AQ-10** (TRU Plug-Ins) would be required to reduce emissions generated during operation of the Proposed Project. Nonetheless, even with the implementation of mitigation, potential impacts during operation of the Proposed Project would remain **significant and unavoidable** under CEQA, and potential effects would remain **adverse** under NEPA.

Sensitive Receptor Impacts

Sensitive receptors are those individuals more susceptible to the effects of air pollution than the population at large. To determine the Proposed Project's potential to impact nearby sensitive receptors, a Localized Significance Thresholds (LST) analysis, Carbon Monoxide (CO) hotspots screening evaluation, Toxic Air Contaminants (TAC) exposure analysis, and criteria air pollutant health effect evaluation were conducted. The determinations were as follows:

According to the LST analysis, construction activities associated with the Proposed Project would generated PM_{10} and $PM_{2.5}$ emissions in excess of site-specific LSTs; therefore, localized construction impacts would be potentially significant and mitigation is required. Mitigation measures **MM-AQ-1** and **MM-AQ-2** (Construction Equipment Emissions Reduction and Fugitive Dust Control, respectively) would be required to reduce the Proposed Project's construction-related emissions. Nonetheless, site-specific impacts during construction of the Proposed Project would remain **significant and unavoidable** under CEQA, and potential effects would remain **adverse** under NEPA.

The CO hotspots screening evaluation determined the Proposed Project would not negatively affect the LOS of intersections in the Proposed Project vicinity and would not significantly contribute to a CO hotspot.

The potential health risk of exposing sensitive receptors to construction-generated TAC emissions, primarily DPM, is considered potentially significant and mitigation is required. Implementation of mitigation measure **MM-AQ-1**, which would result in reductions in exhaust PM10 emissions from construction equipment, would be required. Nonetheless, the potential health risk of exposing sensitive receptors to construction-generated TAC emissions, primarily DPM, is considered **significant and unavoidable**. Operational TAC exposure could not be identified due to the uncertainty of future

sensitive receptor locations and the effectiveness of TAC reduction measures. However, to reduce the potential for the Proposed Project to expose sensitive receptors to TACs and the associated health risk, mitigation measures **MM-AQ-11** (Health Risk Siting), **MM-AQ-12** (Toxic Air Contaminant Reduction) and **MM-AQ-13** (Health Risk Assessment Requirements) would be implemented. Note that mitigation measures that reduce criteria air pollutants also reduce TACs, specifically mitigation measures **MM-AQ-6** (Idling Restriction), **MM-AQ-9** (Electric Forklifts), and **MM-AQ-10** (TRU Plug-Ins).

Nonetheless, even with the implementation of mitigation, which cannot be quantified at this time, the Proposed Project would have a **significant and unavoidable** health risk impact as a result of operation under CEQA, and potential effects would remain **adverse** under NEPA.

Based on the criteria air pollutant evaluation, because construction and operation of the Proposed Project could result in exceedances of the SCAQMD significance thresholds for VOC, NO_x, CO, and PM_{10} , the potential health effects associated with criteria air pollutants are considered potentially significant. The implementation of mitigation measures **MM-AQ-1** through **MM-AQ-3** would be required to reduce the Proposed Project's construction-related emissions, and the implementation of mitigation measures **MM-AQ-4** through **MM-AQ-10** would be required to reduce emissions generated during operation of the Proposed Project. Nonetheless, even with the implementation of mitigation, potential impacts would remain **significant and unavoidable** during both construction and operation under CEQA, and potential effects would remain **adverse** under NEPA.

5.1.2 Cultural Resources

As discussed in Section 3.3, Cultural Resources, of this Draft PEIR/PEIS, the Proposed Project would result in significant and unavoidable impacts with regard to the built environment. Implementation of the GCSP has the potential to result in the modification or demolition of historic-age structures over 45 years of age in the Plan Area.

There are known historical resources in the Plan Area and the potential for more properties that have not been evaluated and could be CEQA historical resources. In particular, the Plan Area includes resources that are recently reaching 45 years or more of age and are associated with periods of Long Beach history not fully documented in the Historic Context Statement. Preservation of these modern buildings may not be feasible or consistent with the goals of the GCSP. Furthermore, as these resources are not listed, may be eligible for local listing but not the state or national register, impacts under CEQA will differ from NEPA.

Implementation of mitigation measure **MM-CUL-1**, which requires future project proponents to ensure that potential impacts to historical resources be assessed at the project level, and that properties 45 years old or older be evaluated for historical significance prior to initiation of

any project-related activities that could identify significant impacts to historic properties. Development under the proposed GCSP has a potential for demolishing structures that are eligible for historic significance.

In the event, a future development proposal could result in the demolition of a historical resource, the inclusion of mitigation measure **MM-CUL-2** would ensure that the historic structure is documented pursuant to the guidelines of Historic American Building Survey (HABS)-level III. This documentation would be prepared by a qualified professional in the field. Due to the potential loss of historic age structures with implementation of the GCSP, significant impacts would remain after the incorporation of identified mitigation. As such, impacts would be **significant and unavoidable** under CEQA, and potential effects would remain **adverse** under NEPA.

5.1.3 Greenhouse Gas Emissions

As discussed in Section 3.4, Greenhouse Gas Emissions, of this Draft PEIR/PEIS, the Proposed Project would result in significant and unavoidable greenhouse gas (GHG) impacts related to a cumulatively considerable GHG contribution, and would also conflict with applicable GHG emissions reductions plans, policies, or regulations.

As shown in Table 3.4-2 (see Section 3.4, Greenhouse Gas Emissions, of this Draft PEIR/PEIS), the estimated total GHG emissions during construction of would total approximately 28,492 MT CO_2e over the assumed 20-year construction period. Estimated Proposed Project-generated construction emissions amortized over 30 years would be approximately 950 MT CO_2e per year. As shown in Table 3.4-3 (see Section 3.4, Greenhouse Gas Emissions, of this Draft PEIR/PEIS), estimated annual Proposed Project-generated GHG emissions would be approximately 120,999 MT CO_2e per year as a result of Proposed Project operations only. As the Existing Scenario is estimated to generate 57,783 MT CO_2e per year, the net change in emissions is estimated to be 63,216 MT CO_2e per year. After accounting for amortized Proposed Project construction emissions, total net GHGs generated by the Proposed Project would be approximately 64,166 MT CO_2e per year. As such, annual operational GHG emissions with amortized construction emissions would exceed the SCAQMD threshold of 3,000 MT CO_2e per year.

Because the Proposed Project would exceed the Tier 3 SCAQMD threshold of 3,000 MT CO_2e per year, a Tier 4 analysis is conducted to evaluate the Proposed Project's efficiency on a service population basis. The Tier 4 efficiency metric threshold used is 1.92 MT CO_2e/SP/year consistent with the RDEIR prepared for the General Plan Land Use and Urban Design Elements Project (City of Long Beach 2019b), which is also a plan-level analysis with a 2040 buildout year. The efficiency metric threshold used is 1.92 MT CO_2e/SP/year is more stringent than the proposed SCAQMD 2035 efficiency metric of 4.1 MT CO_2e/SP/year for plan level analyses. As shown in Table 3.4-3, the Proposed Project would generate approximately 120,999 MT CO_2e per year as a result of

Proposed Project operations only; however, the net change between the Proposed Project and Existing, plus amortized Proposed Project construction emissions, is 64,166 MT CO_2e per year. The Proposed Project's service population, which is defined as residents plus employees, consists solely of employees as the Proposed Project does not include a residential land use component. Per the Proposed Project's job projection analysis, the estimated service population (i.e., employees) for the Proposed Project is 11,170 (Svesson 2020).[2] Accordingly, the Proposed Project is estimated to result in 5.74 MT CO_2e/SP/year (64,166 MT CO_2e/year ÷ 11,170 SP), which would exceed the applied efficiency metric threshold 1.92 MT CO_2e/SP/year.

Therefore, the Proposed Project's GHG contribution would be cumulatively considerable and is potentially significant. Implementation of mitigation measures **MM-AQ-1** (Construction Equipment Emissions Reductions), **MM-AQ-4** (Vehicle Miles Traveled Reduction Strategies), **MM-AQ-5** (Encourage Electric Vehicles), **MM-AQ-6** (Idling Restriction), **MM-AQ-7** (Energy Conservation), **MM-AQ-9** (Electric Forklifts), **MM-AQ-10** (TRU Plug-Ins), **MM-GHG-1** (Water Conservation), and **MM-GHG-2** (Solid Waste Reduction) would reduce Proposed Project-generated GHG emissions. However, even with the implementation of mitigation, impacts would remain **significant and unavoidable**.

The Proposed Project would potentially conflict with plans, policies, or regulations adopted for the purpose of reducing GHG emissions, and as such, impacts are considered potentially significant. As discussed previously, implementation of mitigation measures **MM-AQ-1** (Construction Equipment Emissions Reductions), **MM-AQ-4** (Vehicle Miles Traveled Reduction Strategies), **MM-AQ-5** (Encourage Electric Vehicles), **MM-AQ-6** (Idling Restriction), **MM-AQ-7** (Energy Conservation), **MM-AQ-9** (Electric Forklifts), **MM-AQ-10** (TRU Plug-Ins), **MM-GHG-1** (Water Conservation), and **MM-GHG-2** (Solid Waste Reduction) would reduce Proposed Project-generated GHG emissions and associated impacts related to the potential to conflict with applicable GHG emissions reduction plans, policies, or regulations. In addition to the various mitigation measures required, the City is in the process of developing a Climate Action and Adaptation Plan (CAAP) to ensure that the City continues on a trajectory that aligns with the short-term, interim, and long-term State GHG reduction goals. Implementation of the CAAP would contribute to reducing GHG emissions resulting from Proposed Project implementation to the extent applicable to non-residential land use development. However, no credit for the Citywide emissions reduction plan was taken, as the implementation of the CAAP is speculative until its approved. Even with the implementation of mitigation, impacts would remain **significant and unavoidable** under CEQA.

[2] As explained in Section 2 and 3.2, in 2040, the estimated job absorption for the Proposed Project is 4,884; the remaining 6,286 jobs are anticipated to occur after 2040. However, the emission inventory for the Proposed Project, as presented in Table 3.4-3, assumes buildout of the entire GCSP by 2040. Therefore, it is appropriate to assume the full employment projection to estimate an efficiency metric when using full buildout emissions as the basis.

5.1.4 Transportation

Existing (Year 2018) Plus Project Conditions

The Traffic Impact Analysis (Appendix D) evaluates the Proposed Project-related impacts at 28 key study intersections per City of Long Beach and City of Signal Hill significant impact criteria. Under the Existing (2018) Plus Project Intersection Peak Hour Levels of Service, six of the key intersections are forecast to operate adversely with the addition of Proposed Project Traffic. Five of these intersections are considered significantly impacted compared to LOS standards. With the implementation of mitigation measures **MM-TRAF-1** through **MM-TRAF-5**, all intersections would operate at acceptable LOS conditions under Existing (Year 2018) Plus Project conditions.

Although the intersection of Orange Avenue/I-405 southbound ramps is forecast to operate at unacceptable LOS F in the AM and PM peak hour, the intersection is not considered affected when compared to the LOS standards utilized by City of Long Beach, which specifies that an unsignalized intersection impact is considered to be significant if the project causes an intersection at LOS D or better to degrade to LOS E or F. Also, preliminary review of the existing volumes indicate that the intersection satisfies the criteria for the installation of a traffic signal. Should Caltrans or the City of Long Beach desire to install a traffic signal at this location, the Proposed Project may be expected to pay a fair-share of the total cost.

Year 2040 Plus Project Conditions

Under the Year 2040 Baseline Plus Project traffic conditions, 10 of the key intersections are forecast to operate adversely with the addition of Proposed Project traffic, and are considered significantly impacted when compared to the LOS standards utilized by City of Long Beach. Implementation of mitigation measures **MM-TRAF-5** through **MM-TRAF-13** at the significantly impacted intersections will completely offset the Proposed Project's impact and improve the LOS to acceptable conditions.

Although the intersection of Orange Avenue/I-405 southbound ramps is forecast to operate at unacceptable LOS F in the AM and PM peak hour, the intersection is not considered affected when compared to the LOS standards utilized by City of Long Beach, which specifies that an operational deficiency occurs if the project causes an intersection at LOS D or better to degrade to LOS E or F. Since the study intersection currently operates at an adverse LOS under existing traffic conditions, the Proposed Project's affect is not considered to be adverse or unacceptable. Although this intersection is not considered significantly impacted, it does operate adversely under existing traffic conditions. Also, preliminary review of the existing volumes indicate that the intersection satisfies the criteria for the installation of a traffic signal. Should Caltrans or the City of Long Beach desire to install a traffic signal at this location, future development under the Proposed Project may be expected to pay a fair-share of the total cost.

Caltrans Facilities Analysis

In conformance with the current Caltrans *Guide for the Preparation of Traffic Impact Studies, dated December 2002*, existing and projected peak hour operating conditions at the four state-controlled study intersections within the study area have been evaluated using the *Highway Capacity Manual* operations method of analysis.

An analysis of Caltrans Facilities indicates that the Proposed Project would impact the I-405 Southbound Off-Ramp/Spring Street intersection under Existing Plus Project traffic conditions. Although the intersection of Orange Avenue/I-405 southbound ramps currently and is forecast to operate at unacceptable LOS F in the AM and PM peak hour, impacts are not considered significant. The significance impact criteria of the City of Long Beach specifies that an unsignalized intersection impact is considered to be significant if the project causes an intersection at LOS D or better to degrade to LOS E or F. Although this intersection is not considered significantly impacted, it does operate adversely under existing traffic conditions. Also, preliminary review of the existing volumes indicate that the intersection satisfies the criteria for the installation of a traffic signal. Should Caltrans or the City of Long Beach desire to install a traffic signal at this location, the Project may be expected to pay a fair-share of the total cost. With the implementation of mitigation measures **MM-TRAF-9**, the I-405 Southbound Off-Ramp/Spring Street intersection would operate at acceptable LOS conditions.

The Proposed Project would also impact the I-405 Southbound Off-Ramp/Spring Street intersection, along with I-405 Northbound Ramp/32nd Street intersection, under Year 2040 Plus Project. With the implementation of mitigation measures **MM-TRAF-9** and **MM-TRAF-14**, the I-405 Southbound Off-Ramp/Spring Street intersection and the I-405 Northbound Ramp/32nd Street intersection would operate at acceptable LOS conditions.

Mitigation measures in Section 3.11.6, Mitigation Measures (see Section 3.11, Transportation, of this Draft PEIR/PEIS) identify when the proposed improvements would fall under the authority of another jurisdiction or require additional right-of-way acquisition causing operational deficiencies or conflicts with the intent of the specific plan. All identified mitigation measures were determined to be infeasible, therefore, all impacts related to consistency with established LOS metrics are considered **significant and unavoidable**.

5.2 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Section 15126.2(c) of the State CEQA Guidelines requires that an EIR analyze the extent to which a project's primary and secondary effects would impact the environment and commit nonrenewable resources to uses that future generations will not be able to reverse. Nonrenewable resources that would be used on-site during construction and operation include natural gas, other fossil fuels, water, concrete, steel, and lumber. The Proposed Project would result in the commitment of such resources.

Electricity is provided to the Plan Area by Southern California Edison (SCE). SCE serves approximately 180 cities in 11 counties across Central and Southern California. SCE's electrical energy generation sources include natural gas, coal, nuclear, renewable energy (geothermal, small hydroelectric, solar, and wind), and large hydroelectric facilities. Based on an SCE interactive distribution map last updated on September 14, 2012, three substations (5738, 5753, and 5785) service the Plan Area with overlapping coverage. The amount of electricity used during construction would be minimal and would only occur during the hours of construction. The majority of energy used during construction would be from petroleum. Fuel consumed by construction equipment and associated with the transportation of construction materials and construction worker commutes would be the primary energy resource expended during construction. In addition, a variety of resource materials would be used during construction, including steel, wood, concrete, and fabricated materials. Once these materials and fuels are used for construction, the commitment of such materials and fuels would be considered irreversible. Further, the Proposed Project would be required to comply with the California Air Resources Board's Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes. Therefore, because petroleum use during construction would be temporary and minimal, the Proposed Project would not result in the excessive use of fuel or energy or the use of excessive amounts of power, and impacts would not be irreversible.

Operation of the Proposed Project would require the commitment of nonrenewable resources related to energy consumption. At full build out, the Proposed Project's operational phase would require electricity for operating the various buildings. Natural gas would be directly consumed throughout operation of the Proposed Project, primarily through building heating. The Proposed Project would also result in petroleum fuel consumption from motor vehicles traveling to and from the Plan Area, and uses affiliated with motorized transportation of goods. Although consumption of resources would necessarily occur, the Proposed Project would not result in the inefficient, wasteful, and unnecessary consumption of resources.

5.3 GROWTH-INDUCING IMPACTS

Section 15126.2(d) of the State CEQA Guidelines requires that an EIR include a discussion of the growth-inducing impacts of a project. Growth-inducing impacts are those effects of the Proposed Project that might foster economic or population growth or the construction of new housing, either directly or indirectly, in the surrounding environment. According to CEQA, increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects.

Induced growth is any growth that exceeds planned growth and results from new development that would not have taken place without the implementation of the Proposed Project. Typically, the growth-inducing potential of a project would be considered significant if it results in growth or

population concentration that exceeds those assumptions included in pertinent master plans, land use plans, or projections made by regional planning authorities. However, the creation of growth-inducing potential does not automatically lead to growth, whether it would be below or in exceedance of a projected level.

The environmental effects of induced growth are secondary or indirect impacts of the Proposed Project. Secondary effects of growth could result in significant, adverse environmental impacts, which could include increased demand on community or public services, increased traffic and noise, degradation of air and water quality, and conversion of agricultural land and open space to developed uses. The Population and Housing section of the EIR discusses the potential growth inducement of the Proposed Project (Section 3.9, Population and Housing, of this Draft PEIR/PEIS). Population growth, in and of itself, does not constitute a physical impact on the environment. However, population growth is relevant in that it may generate secondary environmental impacts as defined under the CEQA, such as increased demands for public services, surpassing of infrastructure capacities, or increased traffic congestion and resulting air pollutant emissions. These indirect environmental effects related to population growth are addressed in the applicable sections of this Draft PEIR/PEIS.

The GCSP does not include any zoning for residential land uses that could directly induce population growth. The Plan Area is highly urbanized, already built out, and has the infrastructure to support new zoning designations and development regulations for commercial and industrial realted land uses as proposed under the GCSP. While the GCSP could increase the number of jobs available relative to the number of jobs that are currently available, increase in employment during construction and operation are not expected to cause people to move into the City or the County from areas outside the City or County. Further, the future zoning and development regulations as propsod under the GCSP would be consistent with what was planned for and envisioned in the City's 2019 Land Use Element.

The extent to which new jobs created by a project are filled by existing residents is a factor that tends to reduce the growth-related effect of a project. While the GCSP is a planning document and does not include any physical improvements or projects at this time, future development facilitated by Proposed Project approval would create a number of temporary, construction-related jobs, as well as permanent jobs associated with the new future developments. As discussed in Section 3.9, Population and Housing, of this Draft PEIR/PEIS, the City of Long Beach is expected to have a jobs-to-housing ratio of 1.04 by 2040, which is lower than Los Angeles County and the SCAG region by 0.28 and 0.27, respectively. This means that the City is considered to be "jobs poor," indicating that many of the residents must commute to places of employment outside of the City. While it is uncertain where future place of residence would be for employees working within the Plan Area, due to the City's projected jobs-to-housing ratio (1.04 by 2040), it is reasonable to assume that a large percentage of these jobs would be filled by persons already living within the

City. Therefore, a substantial increase in population as a result of future employment opportunities potentially facilitated by the GCSP is not anticipated.

In addition, due to the significant job loss that resulted in the area from closure of the C-17 Site, which is evident by the number of manufacturing jobs lost from 2010 to 2016, the new jobs created by the GCSP would likely be replacing those that were lost in the area due to closure of the C-17 Site. A principal goal of the GCSP is to stimulate economic growth and attract businesses that replenish high-quality jobs lost from the closure of the former Boeing C-17 manufacturing plant.

Furthermore, although the GCSP would allow for new employment opportunities in the City of Long Beach through the year 2040, it would be consistent with SCAG's regional growth forecasts for employment in the same horizon year. Thus, the Proposed Project would not foster growth in excess of what was asumed in projections made by regional planning agencies (e.g., SCAG). As such, the Proposed Project would not result in significant adverse secondary effects related to induced growth.

5.4 EFFECTS NOT FOUND TO BE SIGNIFICANT

Section 15128 of the State CEQA Guidelines requires a statement that briefly indicates the reasons that various possible significant effects of a project were determined not to be significant and were, therefore, not discussed in detail in the EIR. As stated in the State CEQA Guidelines, such a statement may be contained in an attached copy of an Initial Study. An Initial Study was prepared for the Proposed Project and is included in Appendix A-1. As described and substantiated in the Initial Study (Appendix A-1), all threshold questions related to Agriculture and Forestry Resources, Biological Resources, Geology and Soils, Mineral Resources, and Recreation were not found to be significant, and no additional anlaysis in the PEIR/PEIS was required. Threshold questions not further analyzed in the PEIR/PEIS within the other fourteen issue areas are discussed throughout Chapter 3.0.

5.4.1 Wildfire

On December 28, 2018, the California Natural Resources Agency finalized the updates to the State CEQA Guidelines. The Notice of Preparation (NOP) for the Proposed Project was issued September 12, 2018, and the environmental analysis was initiated at the same time. As such, the analysis included within this PEIR/PEIS considers the State CEQA Guidelines that were effective at the time the NOP was issued and environmental analysis began. The new State CEQA Guidelines (adopted December 28, 2018) now include a discussion in Appendix G on Wildfire, and for the reasons discussed previously, are not included within the analysis provided throughout this PEIR/PEIS. The following discussion describes the Proposed Project's environmental impact as it relates to wildfire, which was found to be less than significant:

According to Cal Fire's Fire Hazard Severity Zone Viewer, the Plan Area and surrounding area is not located in a very high fire hazard severity zone (VHFHSZ) (Cal Fire 2019). The Plan Area is located within a fully developed area and is not located adjacent to, or in the vicinity of, wildland areas. There are no designated open space areas surrounding the Plan Area. As such, prevailing winds and other factors would not create or exacerbate wildfire risks. The Plan Area is highly disturbed and consists primarily of commercial and industrial uses with some vegetation and small amounts of unpaved areas. Due to the highly disturbed nature of the Plan Area, the installation or maintenance of associated infrastructure (such as roads, or other utilities) would not create or exacerbate a fire risk. Additionally, the Proposed Project would not install fuel breaks or emergency water sources that may. The Plan Area is relatively flat, and thus, would not 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. Future development under the Proposed Project would not conflict with existing plans governing emergency access. Therefore, impacts related to wildfire are considered **less than significant**, and no cumulative impacts related to wildfires would occur.

5.5 REFERENCES

CAL FIRE (California Department of Forestry and Fire Protection). 2019. "FHSZ Viewer." Accessed July 22, 2019. http://egis.fire.ca.gov/FHSZ/.

City of Long Beach. 2019. General Plan. Land Use Element. December 2019. http://www.longbeach.gov/globalassets/lbds/media-library/documents/planning/advance/lueude/land-use-element-final-adopted-december-2019.

CHAPTER 6.0
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