



Volume I



SANTA ANA GENERAL PLAN UPDATE

golden city beyond
A SHARED VISION FOR SANTA ANA

Draft Program Environmental Impact Report

State Clearinghouse #2020029087

August 2020

Prepared for:

City of Santa Ana

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PLACEWORKS

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ABBREVIATIONS AND ACRONYMS

AAQS	ambient air quality standards
AB	Assembly Bill
ACM	asbestos-containing materials
ACS	American Community Survey
ADT	average daily traffic
AELUP	airport environs land use plan
af	acre-foot
afy	acre-feet per year
ALUC	airport land use commission
AQMD	air quality management district
AQMP	air quality management plan
AR4	*Fourth Assessment Report: Climate Change 2007* (Intergovernmental Panel on Climate Change)
BMP	best management practices
BPP	basin production percentage
CAFE	corporate average fuel economy
CalARP	California Accidental Release Prevention Program
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CALGreen	California Green Building Standards Code
Cal OES	California Office of Emergency Services
Cal/OSHA	California Occupational Safety and Health Administration
CalRecycle	California Department of Resources, Recycling, and Recovery
Caltrans	California Department of Transportation
CAP	climate action plan
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CDBG	Community Development Block Grants
CDFW	California Department of Fish and Wildlife
CDR	Center for Demographic Research
CEC	California Energy Commission

Abbreviations and Acronyms

CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFC	California Fire Code
CFR	Code of Federal Regulations
CGP	Construction General Permit
CHRIS	California Historical Resources Information System
CIP	capital improvements program
CMP	congestion management program
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
COG	council of governments
CPUC	California Public Utilities Commission
CRR	Community Risk Reduction (OCFA department)
CTC	California Transportation Commission
CUPA	Certified Unified Program Agency
dB	decibel
dBA	A-weighted decibel
DOF	Department of Finance (CA)
DOT	US Department of Transportation
DPM	diesel particulate matter
DSOD	Division of Safety of Dams
DTSC	Department of Toxic Substances Control
DU	dwelling unit
DWR	Department of Water Resources (CA)
EAP	emergency action plan
EDD	California Employment Development Department
EIR	environmental impact report
EOP	emergency operations plan
EPA	United States Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
FAA	Federal Aviation Administration

Abbreviations and Acronyms

FAR	Federal Aviation Regulation
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHSZ	fire hazard severity zone
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GGUSD	Garden Grove Unified School District
GHG	greenhouse gases
gpd	gallons per day
GPU	General Plan Update
GSP	groundwater sustainability plan
GWh	gigawatt-hour
GWP	global warming potential
GWRS	groundwater replenishment system
HAA	Housing Accountability Act
HCD	California Housing and Community Development Department
HCP	habitat conservation plan
HOO	housing opportunity ordinance (City)
HRC	Historic Resources Commission (City)
HUD	US Department of Housing and Urban Development
HVAC	heating, ventilating, and air conditioning system
IFC	International Fire Code
IPCC	Intergovernmental Panel on Climate Change
IRWD	Irvine Ranch Water District
JWA	John Wayne Airport
kWh	kilowatt hour
L_{dn}	day-night noise level
L_{eq}	equivalent continuous noise level
LACM	Natural History Museum of Los Angeles County
LBP	lead-based paint
LCFS	low-carbon fuel standard
LEPC	local emergency planning committee
LID	low impact development

Abbreviations and Acronyms

LIP	local implementation plan
LOS	level of service
LRA	local responsibility area
LRTP	long range transportation plan
LST	localized significance thresholds
MATES	Multiple Air Toxics Exposure Study
MEMU	Metro East Mixed Use (Overlay Zone)
mgd	million gallons per day
MMcf	million cubic feet
MMT	million metric tons
MPAH	Master Plan of Arterial Highways (OCTA)
MPD	master plan of drainage
MPO	metropolitan planning organization
MPSH	Master Plan of Streets and Highways (City)
MRZ	mineral recovery zone
MT	metric ton
MWD	Metropolitan Water District of Southern California
MWDOC	Municipal Water District of Orange County
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NCCP/HCP	natural communities conservation plan/habitat conservation plan
NHMP	natural hazards mitigation plan
NHPA	National Historic Preservation Act
NO_X	nitrogen oxides
NOP	Notice of Preparation
NPDES	National Pollution Discharge Elimination System
NRHP	National Register of Historic Places
O_3	ozone
OCFA	Orange County Fire Authority
OCFCD	Orange County Flood Control District
OCHCA	Orange County Health Care Agency
OCPW	Orange County Public Works
OCSD	Orange County Sanitary District

Abbreviations and Acronyms

OCTA	Orange County Transportation Authority
OCTAM	Orange County Traffic Analysis Model
OCWD	Orange County Water District
OEHHA	California Office of Environmental Health Hazard Assessment
OHP	Office of Historic Preservation
OPR	Governor's Office of Planning and Research
OUSD	Orange Unified School District
P-C regions	production-consumption regions
PEIR	program environmental impact report
PHGA	peak horizontal ground acceleration
PHMSA	Pipeline and Hazardous Materials Safety Administration (US)
PM	particulate matter
ppm	parts per million
PPV	peak particle velocity
PRC	California Public Resources Code
PRD	permit registration document
RCRA	Resource Conservation and Recovery Act
RHNA	regional housing needs assessment
RMS	root mean square
RPS	renewable portfolio standard
RTP	regional transportation plan
RTP/SCS	regional transportation plan / sustainable communities strategy
RWQCB	Regional Water Quality Control Board
SAMC	Santa Ana Municipal Code
SARA	Superfund Amendments and Reauthorization Act
SAUSD	Santa Ana Unified School District
SB	Senate Bill
SCAG	Southern California Association of Governments
SCCIC	South Central Coastal Information Center
SCD	Statewide Compliance Division
SCE	Southern California Edison
SCS	sustainable communities strategy
SD	specific development

Abbreviations and Acronyms

SERC	State Emergency Response Commission
SGMA	California Sustainable Groundwater Management Act
SIP	state implementation plan
SLF	Sacred Lands File
SMARA	Surface Mining and Reclamation Act
SMP	sewer master plan
SoCAB	South Coast Air Basin
SO_X	sulfur oxides
SOI	sphere of influence
SQMP	stormwater quality management plan
SRA	source receptor area (air quality)
SRA	state responsibility area (wildfire)
SWP	State Water Project
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
TCR	tribal cultural resource
TDS	total dissolved solids
TIA	traffic impact analysis
TMDL	total maximum daily load
TNM	transportation noise model
tpd	tons per day
TUSD	Tustin Unified School District
UASI	Urban Area Security Initiative
USACE	US Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
UWMP	urban water management plan
VdB	velocity decibels
VMT	vehicle miles traveled
VOC	volatile organic compound
WMP	water master plan

Abbreviations and Acronyms

WQMP	water quality management plan
WUI	wildland-urban interface
ZE/NZE	zero emissions / near-zero emissions
ZNE	zero net energy

Abbreviations and Acronyms

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1. Executive Summary

1.1 INTRODUCTION

This Draft Program Environmental Impact Report (Draft PEIR) addresses the environmental effects associated with the implementation of the proposed General Plan Update (GPU) for the City of Santa Ana. The California Environmental Quality Act (CEQA) requires that local government agencies, prior to taking action on projects over which they have discretionary approval authority, consider the environmental consequences of such projects. An environmental impact report (EIR) is a public document designed to provide the public and local and state governmental agency decision makers with an analysis of potential environmental consequences to support informed decision-making.

This Draft PEIR has been prepared pursuant to the requirements of CEQA and the City of Santa Ana's CEQA procedures. The City of Santa Ana, as the lead agency, has reviewed and revised as necessary all submitted drafts, technical studies, and reports to reflect its own independent judgment, including reliance on applicable City technical personnel from other departments and review of all technical subconsultant reports.

Data for this Draft PEIR was obtained from on-site field observations, discussions with affected agencies, analysis of adopted plans and policies, review of available studies, reports, data and similar literature, and specialized environmental assessments (aesthetics, agricultural resources, air quality, biological resources, cultural resources, energy, geological resources, greenhouse gases, hazards and hazardous materials, hydrology and water quality, land use, mineral resources, noise, population and housing, public services, recreation, transportation, tribal cultural resources, utilities and service systems, and wildfire).

1.2 ENVIRONMENTAL PROCEDURES

This Draft PEIR has been prepared pursuant to CEQA to assess the environmental effects associated with implementation of the GPU, as well as anticipated future discretionary actions and approvals. The six main objectives of this document as established by CEQA are listed below:

1. To disclose to decision makers and the public the significant environmental effects of proposed activities.
2. To identify ways to avoid or reduce environmental damage.
3. To prevent environmental damage by requiring implementation of feasible alternatives or mitigation measures.
4. To disclose to the public reasons for agency approval of projects with significant environmental effects.
5. To foster interagency coordination in the review of projects.

6. To enhance public participation in the planning process.

An EIR is the most comprehensive form of environmental documentation identified in CEQA and the CEQA Guidelines and provides the information needed to assess the environmental consequences of a proposed project, to the extent feasible. EIRs are intended to provide an objective, factually supported, full-disclosure analysis of the environmental consequences associated with a proposed project that has the potential to result in significant, adverse environmental impacts.

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

1.2.1 PEIR Format

This Draft PEIR has been formatted as described below.

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

Section 2. Introduction: Describes the purpose of this Draft PEIR, background on the project, the Notice of Preparation, the use of incorporation by reference, and Final PEIR certification.

Section 3. Project Description: A detailed description of the GPU, its objectives, the plan area, approvals anticipated to be needed, the necessary environmental clearances for the project, and the intended uses of this Draft PEIR.

Section 4. Environmental Setting: A description of the physical environmental conditions in the plan area as they existed at the time the Notice of Preparation was published, from both a local and regional perspective. The environmental setting provides baseline physical conditions from which the lead agency determines the significance of environmental impacts resulting from the GPU.

Section 5. Environmental Analysis: Provides, for each environmental parameter analyzed, a description of the thresholds used to determine if a significant impact would occur; the methodology to identify and evaluate the potential impacts; the existing environmental setting; the potential adverse and beneficial effects of the GPU; the level of impact significance before mitigation; the mitigation measures; the level of significance of the adverse impacts of the GPU after mitigation is incorporated; and the potential cumulative impacts associated with the GPU and other existing, approved, and proposed development in the area.

Section 6. Significant Unavoidable Adverse Impacts: Describes the significant unavoidable adverse impacts of the GPU.

Section 7. Alternatives to the Proposed Project: Describes the impacts of the alternatives to the GPU, including the No Project Alternative and three alternative land use plans. In accordance with the CEQA Guidelines, this section identifies a superior environmental alternative among the alternatives (exclusive of the No Project alternative) and evaluates the potential for each alternative to achieve the project objectives.

Section 8. Impacts Found Not to Be Significant: Briefly describes the potential impacts of the project that were determined not to be significant were therefore not discussed in detail in Section 5.

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

Section 10. Growth-Inducing Impacts of the Project: Describes the ways in which the GPU would cause increases in employment or population that could result in new physical or environmental impacts.

Section 11. Organizations and Persons Consulted: Lists the people and organizations that were contacted during the preparation of this Draft PEIR for the GPU.

Section 12. Qualifications of Persons Preparing EIR: Lists the people who prepared this Draft PEIR.

Section 13. Bibliography: A bibliography of the technical reports and other documentation used in the preparation of this Draft PEIR for the GPU.

Appendices. The appendices for this document (presented in Volumes II and III, and in PDF format on a CD attached to the back cover) contain the following supporting documents:

Volume II

- Appendix A: NOP, NOP Comment Letters, and Scoping Meeting Sign-In Sheet and Comments
- Appendix B-a: Proposed General Plan Update Policies
- Appendix B-b: Santa Ana Buildout Methodology
- Appendix C: Air Quality and Greenhouse Gas Emissions Modeling
- Appendix D: Biological and Natural Resource Inventory and Assessment
- Appendix E-a: Historical Resources Technical Report
- Appendix E-b: Archeological Resources Technical Report
- Appendix F: Energy Worksheet
- Appendix G-a: Geological Background Technical Report
- Appendix G-b: Paleontological Existing Conditions Technical Report
- Appendix H-a: Infrastructure Technical Report for Hydrology, Sewer, Water, and Water Quality
- Appendix H-b: Water Supply and Demand Technical Report
- Appendix I-a: Noise Existing Condition Report
- Appendix I-b: Noise Monitoring and Modeling Data
- Appendix J-a: Existing Conditions Report for Fire and Police Services
- Appendix J-b: Service Provider Questionnaire Responses

Volume III

- Appendix K: Transportation Impact Study
- Appendix L: Tribal Consultation Correspondence

1.2.2 Type and Purpose of This PEIR

This Draft PEIR fulfills the requirements for a Program EIR. Although the legally required contents of a Program EIR are the same as those for a Project EIR, Program EIRs are typically more conceptual and may contain a more general discussion of impacts, alternatives, and mitigation measures than a Project EIR. As provided in Section 15168 of the State CEQA Guidelines, a Program EIR may be prepared on a series of actions that may be characterized as one large project. Use of a Program EIR provides the City (as lead agency) with the opportunity to consider broad policy alternatives and program-wide mitigation measures and provides the City with greater flexibility to address project-specific and cumulative environmental impacts on a comprehensive basis.

Agencies generally prepare Program EIRs for programs or a series of related actions that are linked geographically, are logical parts of a chain of contemplated events, rules, regulations, or plans that govern the conduct of a continuing program, or are individual activities carried out under the same authority and having generally similar environmental effects that can be mitigated in similar ways.

Once a Program EIR has been prepared, subsequent activities in the program must be evaluated to determine whether an additional CEQA document needs to be prepared. However, if the Program EIR addresses the program's effects as specifically and comprehensively as possible, many subsequent activities could be found to be within the Program EIR scope, and additional environmental documents may not be required (Guidelines Section 15168[c]). When a Program EIR is relied on for a subsequent activity, the lead agency must incorporate feasible mitigation measures and alternatives developed in the Program EIR into the subsequent activities (Guidelines Section 15168[c][3]). If a subsequent activity would have effects not within the scope of the Program EIR, the lead agency must prepare an Initial Study leading to a Negative Declaration, Mitigated Negative Declaration, or an EIR. In this case, the Program EIR still serves a valuable purpose as the first-tier environmental analysis. The CEQA Guidelines (Section 15168[h]) encourage the use of Program EIRs, citing five advantages:

- Provide a more exhaustive consideration of impacts and alternatives than would be practical in an individual EIR.
- Focus on cumulative impacts that might be slighted in a case-by-case analysis.
- Avoid continual reconsideration of recurring policy issues.
- Consider broad policy alternatives and programmatic mitigation measures at an early stage when the agency has greater flexibility to deal with them.
- Reduce paperwork by encouraging the reuse of data (through tiering).

1.3 PROJECT LOCATION

Santa Ana is in the western central portion of Orange County, approximately 30 miles southwest of the city of Los Angeles and 10 miles northeast of Newport Beach (see Figure 3-1, *Regional Location*). Orange County is surrounded by the counties of Los Angeles, San Bernardino, Riverside, and San Diego and is one of six counties comprising the Southern California Region.

As shown in Figure 3-2, *Citywide Aerial*, Santa Ana is bordered by Orange and unincorporated areas of Orange County to the north, Tustin to the east, Irvine and Costa Mesa to the south, and Fountain Valley and Garden Grove to the west. In November 2019, the City annexed the 17th Street Island, a 24.78-acre area in the northeast portion of the city. The 17th Street Island is bounded by State Route 55 to the east, 17th Street to the south, and North Tustin Avenue to the west (see Figure 3-3, *17th Street Island and Sphere of Influence*). The city also includes a portion of the Santa Ana River Drainage Channel in its sphere of influence (SOI). The city and its SOI are defined and referred to herein as the plan area.

Regional access to the city is provided by the Garden Grove Freeway (SR-22) and the Orange Freeway (SR-57) on the north, the Santa Ana Freeway (1-5) on the northeast, the Costa Mesa Freeway (SR-55) on the east, and the San Diego Freeway (l-405) on the south.

1.4 PROJECT SUMMARY

The GPU is the comprehensive update of the Santa Ana General Plan. The purpose of the General Plan Update is to comprehensively update the 1982 plan to reflect current conditions, establish a shared vision of the community's aspirations, and create the policy direction to guide Santa Ana's long-term planning and growth over the next two decades. The General Plan Update will include the City's future development goals and will provide policy statements to achieve those goals. Implementation actions related to each goal or policy will be included as a separate Implementation Plan to ensure successful monitoring of progress as a community.

Furthermore, the GPU will focus on five areas within Santa Ana that are better suited for future development or overall improvement (see Figure 3-11 *Focus Areas and Special Planning Areas*). These focus areas are:

- South Main Street
- Grand Avenue/17th Street
- West Santa Ana Boulevard
- 55 Freeway/Dyer Road
- South Bristol Street

Refer to Chapter 3, *Project Description,* for additional information regarding the GPU.

1.4.1 General Plan Update

The updated General Plan is organized into three sections: Services and Infrastructure (I), Natural Environment (II), and Built Environment (III). The proposed GPU addresses the eight topics required by state law as well as five optional topics. State law gives jurisdictions the discretion to incorporate optional topics and

to address any of these topics in a single element or across multiple elements. The 12 proposed elements of the GPU will replace 16 existing elements. The GPU will incorporate the current 2014–2021 Housing Element, and no substantive changes are anticipated. The topic of housing will be addressed as a separate effort in late 2021 in accordance with State law. The topic of environmental justice will be incorporated throughout the GPU, with goals and policies incorporated into multiple elements. The 12 elements of the proposed GPU are:

Mandatory Topics

- Land Use Element
- Circulation Element
- Housing Element
- Open Space Element
- Conservation Element
- Safety Element
- Noise Element

Optional Topics

- Public Services Element
- Urban Design Element
- Community Element
- Economic Prosperity Element
- Historic Preservation Element

The GPU will guide growth and development (e.g., infill development, redevelopment, and revitalization/restoration) in the plan area by designating land uses in the proposed land use map (see Figure 3-7, *Proposed General Plan Land Uses*) and through implementation of updated goals and policies of the GPU. Table 1-1 outlines the proposed land use designations under the GPU. The proposed land use map and GPU goals and policies are detailed in Section 3.3.3, *General Plan Update*.

Table 1-1 Proposed Land Use Designations and Statistics

Land Use Designation	Acres	% of Total
Grand Avenue/17th Street	***171.5***	**—**
District Center	23.7	13.8
General Commercial	19.9	11.6
Industrial/Flex	7.1	4.1
Open Space	1.1	0.6
Urban Neighborhood	119.7	69.8
55 Freeway/Dyer Road	***354.5***	**—**
District Center	158.0	44.6
General Commercial	68.0	19.2
Industrial/Flex	127.4	35.9
Open Space	1.1	0.3
South Bristol Street	***199.9***	**—**
District Center	108.3	54.2
Open Space	6.0	3.0
Urban Neighborhood	85.7	42.9
South Main Street	***312.2***	**—**
Industrial/Flex	29.0	9.3
Institutional	19.2	66.1
Low Density Residential	162.3	845.8
Urban Neighborhood	101.7	62.7

Table 1-1 Proposed Land Use Designations and Statistics

Land Use Designation	Acres	% of Total
West Santa Ana Boulevard	***481.6***	**—**
Corridor Residential	10.0	2.1
General Commercial	21.5	4.5
Industrial/Flex	87.9	18.3
Institutional	45.5	9.4
Low Density Residential	108.1	22.4
Low-Medium Density Residential	6.8	1.4
Medium Density Residential	27.0	5.6
Open Space	133.6	27.7
Professional and Administrative Office	6.2	1.3
Urban Neighborhood	35.0	7.3
Balance of City	***11,598.8***	**—**
District Center	124.2	1.1
General Commercial	424.2	3.7
Industrial	2,159.6	18.6
Institutional	886.7	7.6
Low Density Residential	6,173.3	53.2
Low-Medium Density Residential	429.0	3.7
Medium Density Residential	335.3	2.9
One Broadway Plaza District Center	4.1	0.0
Open Space	793.8	6.8
Professional and Administrative Office	260.4	2.2
Urban Neighborhood	4.1	0.0
Not Specified	4.1	0.0
Total	**13,118.5**	***100%***

Source: Figures aggregated and projected by PlaceWorks, 2020.

Buildout Scenarios

Per CEQA requirements, this Draft PEIR has to analyze potential environmental impacts and identify feasible mitigation measures for significant impacts for the entire plan area. However, buildout in accordance with the proposed land uses for the entire plan area may not occur for 70 to 80 years. This extended time period does not allow for quantifiable, meaningful analysis. Future conditions, including potential technological advances that would modify impacts, are highly speculative. Moreover, quantified analysis for many impacts rely on models and projections from responsible and regulatory agencies that do not extend beyond 20 years (e.g., urban water management plan for water supply). Therefore, this Draft PEIR analyzes potential impacts assuming full buildout in the year 2045. The full buildout scenario is analyzed in comparison to existing conditions. Table 1-2 details buildout statistics. Similarly, this PEIR provides conclusions regarding impact significance for this scenario for both the proposed GPU and project alternatives.

Table 1-2 Buildout Statistical Summary

PLANNING AREA	BUILDOUT		
	Housing Units	Bldg. Sq. Ft.[1]	Jobs
FOCUS AREAS	**23,955**	**15,684,285**	**35,044**
55 Freeway/Dyer Road	9,952	6,142,283	13,302
Grand Avenue/17th Street	2,283	703,894	1,622
South Bristol Street	5,492	5,082,641	11,192
South Main Street	2,308	946,662	2,151
West Santa Ana Boulevard	3,920	2,808,805	6,777
SPECIFIC PLAN / SPECIAL ZONING	**20,524**	**16,958,445**	**39,702**
Adaptive Reuse Overlay Zone [2]	1,260	976,935	2,567
Bristol Street Corridor Specific Plan	135	143,139	282
Harbor Mixed Use Transit Corridor Specific Plan	4,622	1,967,982	1,578
MainPlace Specific Plan	1,900	2,426,923	5,380
Metro East Mixed-Use Overlay Zone	5,551	4,685,947	12,258
Midtown Specific Plan	607	1,818,253	4,615
Transit Zoning Code	6,449	4,939,266	13,022
ALL OTHER AREAS OF THE CITY [3]	**70,574**	**40,325,086**	**95,670**
CITYWIDE TOTAL	**115,053**	**72,967,816**	**170,416**

Source: City of Santa Ana 2020.

[1] Only includes nonresidential building square footage.

[2] The figures shown on the row for the Adaptive Reuse Overlay represents parcels that are exclusively in the Adaptive Reuse Overlay boundary. Figures for parcels that are within the boundaries of both the Adaptive Reuse Overlay Zone and a specific plan, other special zoning, or focus area boundary are accounted for in the respective specific plan, other special zoning, or focus area.

[3] The City has included an assumption for growth on a small portion (five percent) of residential parcels through the construction of second units, which is distributed throughout the City and is not concentrated in a subset of neighborhoods. Additional growth includes known projects in the pipeline and an increase of 10 percent in building square footage and employment for the professional office surrounding the Orange County Global Medical Center and along Broadway north of the Midtown Specific

1.5 SUMMARY OF PROJECT ALTERNATIVES

The CEQA Guidelines (§ 15126.6[a]) state that an EIR must address "a range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives." The alternatives in this Draft PEIR were based, in part, on their potential ability to reduce or eliminate the following impacts determined to be significant and unavoidable for implementation of the Santa Ana General Plan Update (see Table 1-4, *Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation,* for additional detail):

- Air Quality
- Cultural Resources
- Greenhouse Gas Emissions
- Noise
- Population and Housing

As described in Chapter 7, *Alternatives,* three project alternatives were identified and analyzed for relative impacts compared to the proposed General Plan Update:

- No Project/Current General Plan Alternative
- Reduced Intensity Alternative
- 2020 RTP/SCS Consistency Alternative

A statistical analysis of the alternatives is provided in Table 1-3, *Alternatives Statistical Summary*.

Table 1-3 Alternatives Statistical Summary

	Dwelling Units	Population	Employment	Nonresidential Building SF
General Plan Update	115,053	431,629	170,416	72,967,816
No Project/Current General Plan	101,858	383,202	182,003	75,633,673
Reduced Intensity	109,607	411,804	161,232	68,758,470
2020 RTP/SCS Consistent	83,538	352,941	172,545	71,241,479

Alternative buildout statistics generated by PlaceWorks.

1.5.1 No Project/Current General Plan Alternative

Section 15126.6(e) of the CEQA Guidelines requires that an EIR evaluate and analyze the impacts of the "No-Project" Alternative. When the project is the revision of an existing land use or regulatory plan, policy, or ongoing operation, the no-project alternative is the continuation of the plan, policy, or operation into the future. Therefore, this alternative assumes that the existing General Plan (with various adoption dates for different elements between 1982 and 2014) would remain in effect. This existing General Plan also reflects amendments, including new Specific Plans and special zoning areas that have been adopted up through the Notice of Preparation for this GPU.

1.5.2 Reduced Intensity Alternative

Under the GPU, the only areas that include revisions to land use designations to accommodate new growth are within the five focus areas. Most remaining growth, as detailed in Table 3-8 of the Draft PEIR, would occur within previously approved Specific Plans and special zoning areas. A nominal amount of growth is assumed to occur in other areas of the City and would not require land use amendments. The Reduced Intensity alternative would substantially reduce development capacity within two focus areas, 55 Freeway/Dyer Road and South Bristol Street, that accommodate approximately 65 percent of the housing unit growth and 72 percent of the non-residential use (by building square footage), of the growth projected for the combined focus areas under the GPU. Section 3.3.2.5, *General Plan Buildout Scenario*, provides a discussion of factors considered in determining assumed buildout densities for the GPU. For the focus areas, the forecast buildout is based on development at approximately 80 percent of the maximum allowed development for each respective land use designation. For this alternative, development of the 55 Freeway/Dyer Road and South Bristol Street focus areas would be reduced to approximately 50 percent of the maximum allowed per the land use designations. This alternative would reduce housing units by a total of 5,383 and would reduce total building square footage by approximately 4.2 million square feet distributed between these two focus areas. Overall, this alternative

would reduce the housing growth accommodated by the GPU land use changes by approximately 18 percent and reduce non-residential building square footage by approximately 27 percent.

1.5.3 2020 RTP Consistent Alternative

This alternative was developed to evaluate an update to the General Plan that would be consistent with the population and housing projections used to develop the Southern California Association of Regional Government's (SCAG) RTP/SCS, now referred to as Connect SoCal (adopted May 7, 2020). As evaluated in Section 5.13, Population and Housing, the proposed GPU would result in a significant population and housing impact because development under the GPU would substantially exceed the projections used in Connect SoCal. SCAG uses locally prepared population and housing projections to develop the regional plan. For the City of Santa Ana, those projections were provided by the Orange County Council of Governments (OC COG), as prepared by the Center for Demographic Research (CDR). The population/housing figures reflected for Santa Ana in the regional plan for 2045 are: population, 360,100; total housing units: 80,100; and total jobs, 176,400. Projections for the RTP/SCS (Connect SoCal) use land use designations as approved in adopted General Plans. The employment projections are similar for the GPU and RTP/SCS scenarios, but the RTP/SCS projections for population and housing units are substantially lower than GPU projections (18 percent and 27 percent lower, respectively). The RTP/SCS alternative, therefore, represents the least development-intensive project alternative evaluated for this Draft PEIR.

1.6 ISSUES TO BE RESOLVED

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

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

1.7 AREAS OF CONTROVERSY

In accordance with Section 15123(b)(2) of the CEQA Guidelines, the EIR summary must identify areas of controversy known to the lead agency, including issues raised by agencies and the public. There are no specific areas of known controversy concerning the GPU. Although the City of Santa Ana has no knowledge of expressed opposition to the project, several comments have been received related to traffic impacts, intensification of land uses, and adequacy of public services and utilities. These comments are summarized in Tables 2-1 and 2-2 from the NOP comments and public scoping meeting, respectively.

Prior to preparation of the Draft PEIR, the Notice of Preparation was distributed for comment, which extended from February 26, 2020 to March 27, 2020. A public scoping meeting was held on March 5, 2020. The NOP comment letters received and testimony at the public scoping meeting are summarized in Section 2.0, *Introduction* (see Tables 2-1 and 2-2). The scoping meeting was held at the Santa Ana Police Community Room and attended by a number of community members and interested parties.

Repeated comments were voiced and/or received about traffic impacts to Santa Ana's circulation network, especially as a result of the proposed increase in high density residential units; land use issues, increased densities, and overcrowding, specifically in association with the 55 Freeway/Dyer Road focus area; air quality impacts for city residents, with an emphasis on environmental justice; and adequacy of public services and utilities, mainly water and wastewater facilities, roadways, and parks and open space. Furthermore, agency letters in response to the NOP included requests to address topical concerns such as air quality, biological resources, transportation, and airport hazards.

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

Table 1-4 summarizes the conclusions of the environmental analysis in this Draft PEIR. Impacts are identified as significant or less than significant, and mitigation measures are identified for all significant impacts. The level of significance after application of the mitigation measures is also presented.

1. Executive Summary

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Table 1-4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.1 AESTHETICS			
Impact 5.1-1: The proposed project would alter the visual appearance of the General Plan Update area.	Less than significant	No mitigation measures are required.	Less than significant
Impact 5.1-2: The proposed General Plan Update will not alter scenic resources within a state scenic highway.	No impact	No mitigation measures are required.	No impact
Impact 5.1-3: The proposed project would generate additional light and glare.	Less than significant	No mitigation measures are required.	Less than significant
5.2 AIR QUALITY			
Impact 5.2-1: The additional population growth forecast for the General Plan update and the associated emissions would not be consistent with the assumptions of the air quality management plan.	Potentially significant	AQ-1 Prior to discretionary approval by the City of Santa Ana for development projects subject to CEQA (California Environmental Quality Act) review (i.e., non-exempt projects), project applicants shall prepare and submit a technical assessment evaluating potential project construction-related air quality impacts to the City of Santa Ana for review and approval. The evaluation shall be prepared in conformance with South Coast Air Quality Management District (South Coast AQMD) methodology for assessing air quality impacts. If construction-related criteria air pollutants are determined to have the potential to exceed the South Coast AQMD's adopted thresholds of significance, the City of Santa Ana shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during construction activities. These identified measures shall be incorporated into all appropriate construction documents (e.g., construction management plans) submitted to the City and shall be verified by the City. Mitigation measures to reduce construction-related emissions could include, but are not limited to: ▪ Require fugitive-dust control measures that exceed South Coast AQMD's Rule 403, such as:	Significant and unavoidable

Table 1-4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		• Use of nontoxic soil stabilizers to reduce wind erosion. • Apply water every four hours to active soil-disturbing activities. • Tarp and/or maintain a minimum of 24 inches of freeboard on trucks hauling dirt, sand, soil, or other loose materials. ▪ Use construction equipment rated by the United States Environmental Protection Agency as having Tier 3 (model year 2006 or newer) or Tier 4 (model year 2008 or newer) emission limits, applicable for engines between 50 and 750 horsepower. ▪ Ensure that construction equipment is properly serviced and maintained to the manufacturer's standards. ▪ Limit nonessential idling of construction equipment to no more than five consecutive minutes. ▪ Limit on-site vehicle travel speeds on unpaved roads to 15 miles per hour. ▪ Install wheel washers for all exiting trucks or wash off all trucks and equipment leaving the project area. ▪ Use Super-Compliant VOC paints for coating of architectural surfaces whenever possible. A list of Super-Compliant architectural coating manufactures can be found on the South Coast AQMD's website. AQ-2 Prior to discretionary approval by the City of Santa Ana for development projects subject to CEQA (California Environmental Quality Act) review (i.e., non-exempt projects), project applicants shall prepare and submit a technical assessment evaluating potential project operation phase-related air quality impacts to the City of Santa Ana for review and approval. The evaluation shall be prepared in conformance with South Coast Air Quality Management District (South Coast AQMD) methodology in assessing air quality impacts. If operation-related air pollutants are determined to have the potential to exceed the South Coast AQMD's adopted thresholds of significance, the City of Santa Ana shall require that applicants for new development projects incorporate mitigation measures to	

Table 1-4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		reduce air pollutant emissions during operational activities. The identified measures shall be included as part of the conditions of approval. Possible mitigation measures to reduce long-term emissions could include, but are not limited to the following: ■ For site-specific development that requires refrigerated vehicles, the construction documents shall demonstrate an adequate number of electrical service connections at loading docks for plug-in of the anticipated number of refrigerated trailers to reduce idling time and emissions. ■ Applicants for manufacturing and light industrial uses shall consider energy storage and combined heat and power in appropriate applications to optimize renewable energy generation systems and avoid peak energy use. ■ Site-specific developments with truck delivery and loading areas and truck parking spaces shall include signage as a reminder to limit idling of vehicles while parked for loading/unloading in accordance with California Air Resources Board Rule 2845 (13 CCR Chapter 10 § 2485). ■ Provide changing/shower facilities as specified in Section A5.106.4.3 of the CALGreen Code (Nonresidential Voluntary Measures). ■ Provide bicycle parking facilities per Section A4.106.9 (Residential Voluntary Measures) of the CALGreen Code. ■ Provide preferential parking spaces for low-emitting, fuel-efficient, and carpool/van vehicles per Section A5.106.5.1 of the CALGreen Code (Nonresidential Voluntary Measures). ■ Provide facilities to support electric charging stations per Section A5.106.5.3 (Nonresidential Voluntary Measures) and Section A5.106.8.2 (Residential Voluntary Measures) of the CALGreen Code. ■ Applicant-provided appliances (e.g., dishwashers, refrigerators, clothes washers, and dryers) shall be Energy Star–certified appliances or appliances of equivalent energy efficiency. Installation of Energy Star–	

Table 1-4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		certified or equivalent appliances shall be verified by Building & Safety during plan check. ▪ Applicants for future development projects along existing and planned transit routes shall coordinate with the City of Santa Ana and Orange County Transit Authority to ensure that bus pad and shelter improvements are incorporated, as appropriate.	
Impact 5.2-2: Construction activities associated with future development that would be accommodated under the General Plan update could generate short-term emissions in exceedance of the South Coast Air Quality Management District's threshold criteria.	Potentially significant	Mitigation Measure AQ-1	Significant and unavoidable
Impact 5.2-3: Implementation of the General Plan update would generate long-term emissions in exceedance of South Coast AQMD's threshold criteria.	Potentially significant	Mitigation Measure AQ-2	Significant and unavoidable
Impact 5.2-4: Operation of industrial and warehousing land uses accommodated under the General Plan Update could expose sensitive receptors to substantial toxic air contaminant concentrations.	Potentially significant	AQ-3 Prior to discretionary approval by the City of Santa Ana, project applicants for new industrial or warehousing development projects that 1) have the potential to generate 100 or more diesel truck trips per day or have 40 or more trucks with operating diesel-powered transport refrigeration units, and 2) are within 1,000 feet of a sensitive land use (e.g., residential, schools, hospitals, or nursing homes), as measured from the property line of the project to the property line of the nearest sensitive use, shall submit a health risk assessment (HRA) to the City of Santa Ana for review and approval. The HRA shall be prepared in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment and the South Coast Air Quality Management District. If the HRA shows that the incremental cancer risk and/or noncancer hazard index exceed the respective thresholds, as established by the South Coast AQMD at the time a project is considered, the project applicant will be required to identify and demonstrate that best available control technologies for toxics (T-BACTs),	Significant and unavoidable

Table 1-4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
			including appropriate enforcement mechanisms, are capable of reducing potential cancer and noncancer risks to an acceptable level. T-BACTs may include, but are not limited to, restricting idling on-site, electrifying warehousing docks to reduce diesel particulate matter, or requiring use of newer equipment and/or vehicles. T-BACTs identified in the HRA shall be identified as mitigation measures in the environmental document and/or incorporated into the site plan.	
Impact 5.2-5: Development and operation of land uses accommodated by the General Plan Update could generate emissions that exceed the localized significance thresholds and expose sensitive receptors to substantial concentrations of criteria air pollutants.	Potentially significant	Mitigation Measures AQ-1 and AQ-2.		Significant and unavoidable
Impact 5.2-6: Industrial land uses accommodated under the General Plan update could create other emissions, such as those leading to objectionable odors, that would adversely affect a substantial number of people.	Potentially significant	AQ-4	Prior to discretionary approval by the City of Santa Ana, if it is determined that a development project has the potential to emit nuisance odors beyond the property line, an odor management plan shall be prepared by the project applicant and submitted to the City of Santa Ana for review and approval. Facilities that have the potential to generate nuisance odors include, but are not limited to: ▪ Wastewater treatment plants ▪ Composting, green waste, or recycling facilities ▪ Fiberglass manufacturing facilities ▪ Painting/coating operations ▪ Large-capacity coffee roasters ▪ Food-processing facilities The odor management plan shall demonstrate compliance with the South Coast Air Quality Management District's Rule 402 for nuisance odors. The Odor Management Plan shall identify the best available control technologies for toxics	Less than significant

Table 1-4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		(T-BACTs) that will be utilized to reduce potential odors to acceptable levels, including appropriate enforcement mechanisms. T-BACTs may include but are not limited to scrubbers (i.e., air pollution control devices) at the industrial facility. T-BACTs identified in the odor management plan shall be identified as mitigation measures in the environmental document prepared for the development project and/or incorporated into the project's site plan.	
5.3 BIOLOGICAL RESOURCES			
Impact 5.3-1: Implementation of the General Plan Update could result in adverse impacts to candidate, sensitive, or special-status species	Potentially significant	BIO-1 For development or redevelopment projects that would disturb vegetated land and major streams and are subject to CEQA, a qualified biologist shall conduct an initial screening to determine whether a site-specific biological resource report is warranted. If needed, a qualified biologist shall conduct a field survey for the site and prepare a biological resource assessment for the project, including an assessment of potential impacts to sensitive species, habitats, and jurisdictional waters. The report shall recommend mitigation measures, as appropriate, to avoid or limit potential biological resource impacts to less than significant.	Less than significant
Impact 5.3-2: Development pursuant to the General Plan Update would not impact riparian habitat or other sensitive natural communities.	Less than significant	No mitigation measures are required.	Less than significant
Impact 5.3-3: Development pursuant to the General Plan Update would not impact wetlands and jurisdictional waterways.	Less than significant	No mitigation measures are required.	Less than significant
Impact 5.3-4: The General Plan Update could affect wildlife movement and impact migratory birds.	Potentially significant	Mitigation Measure BIO-1.	Less than significant

Table 1-4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
Impact 5.3-5: The proposed project would not conflict with an adopted NCCP/HCP or local policies or ordinances protecting biological resources.	Less than significant	No mitigation measures are required.		Less than significant
5.4 CULTURAL RESOURCES				
Impact 5.4-1: Buildout consistent with the General Plan Update could impact an identified historic resource.	Potentially significant	CUL-1	**Identification of Historical Resources and Potential Project Impacts.** For structures 45 years or older, a Historical Resources Assessment (HRA) shall be prepared by an architectural historian or historian meeting the Secretary of the Interior's Professional Qualification Standards. The HRA shall include: definition of a study area or area of potential effect, which will encompass the affected property and may include surrounding properties or historic district(s); an intensive level survey of the study area to identify and evaluate under federal, State, and local criteria significance historical resources that might be directly or indirectly affected by the proposed project; and an assessment of project impacts. The HRA shall satisfy federal and State guidelines for the identification, evaluation, and recordation of historical resources. An HRA is not required if an existing historic resources survey and evaluation of the property is available; however, if the existing survey and evaluation is more than five years old, it shall be updated.	Significant and unavoidable
		CUL-2	**Use of the Secretary of the Interior's Standards.** The Secretary of the Interior's Standards for the Treatment of Historic Properties shall be used to the maximum extent practicable to ensure that projects involving the relocation, conversion, rehabilitation, or alteration of a historical resource and its setting or related new construction will not impair the significance of the historical resource. Use of the Standards shall be overseen by an architectural historian or historic architect meeting the Secretary of the Interior's Professional Qualification Standards. Evidence of compliance with the Standards shall be provided to the City in the form of a report identifying and photographing character-defining features and spaces and specifying how the proposed treatment of character-defining features	

Table 1-4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		and spaces and related construction activities will conform to the Standards. The Qualified Professional shall monitor the construction and provide a report to the City at the conclusion of the project. Use of the Secretary's Standards shall reduce the project impacts on historical resources to less than significant.	
		CUL-3 **Documentation, Education, and Memorialization.** If the City determines that significant impacts to historical resources cannot be avoided, the City shall require, at a minimum, that the affected historical resources be thoroughly documented before issuance of any permits and may also require additional public education efforts and/or memorialization of the historical resource. Though demolition or alteration of a historical resource such that its significance is materially impaired cannot be mitigated to a less than significant level, recordation of the resource will reduce significant adverse impacts to historical resources to the maximum extent feasible. Such recordation should be prepared under the supervision of an architectural historian, historian, or historic architect meeting the Secretary of the Interior's Professional Qualification Standards and should take the form of Historic American Buildings Survey (HABS) documentation. At a minimum, this recordation should include an architectural and historical narrative; archival photographic documentation; and supplementary information, such as building plans and elevations and/or historic photographs. The documentation package should be reproduced on archival paper and should be made available to researchers and the public through accession by appropriate institutions such as the Santa Ana Library History Room, the South Central Coastal Information Center at California State University, Fullerton, and/or the HABS collection housed in the Library of Congress. Depending on the significance of the adversely affected historical resource, the City, at its discretion, may also require public education about the historical resource in the form of an exhibit, web page, brochure, or other format and/or memorialization of the historical resource on or near the proposed project site. If memorialized, such memorialization shall be a permanent installation,	

Table 1-4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
			such as a mural, display, or other vehicle that recalls the location, appearance, and historical significance of the affected historical resource, and shall be designed in conjunction with a qualified architectural historian, historian, or historic architect.	
Impact 5.4-2: Development in accordance with the General Plan Update could impact archaeological resources	Potentially significant	CUL-4	For projects with ground disturbance—e.g., grading, excavation, trenching, boring, or demolition that extend below the current grade—prior to issuance of any permits required to conduct ground-disturbing activities, the City shall require an Archaeological Resources Assessment be conducted under the supervision of an archaeologist that meets the Secretary of the Interior's Professionally Qualified Standards in either prehistoric or historic archaeology. Assessments shall include a California Historical Resources Information System records search at the South Central Coastal Information Center and of the Sacred Land Files maintained by the Native American Heritage Commission. The records searches will determine if the proposed project area has been previously surveyed for archaeological resources, identify and characterize the results of previous cultural resource surveys, and disclose any cultural resources that have been recorded and/or evaluated. If unpaved surfaces are present within the project area, and the entire project area has not been previously surveyed within the past 10 years, a Phase I pedestrian survey shall be undertaken in proposed project areas to locate any surface cultural materials that may be present.	Less than significant
		CUL-5	If potentially significant archaeological resources are identified, and impacts cannot be avoided, a Phase II Testing and Evaluation investigation shall be performed by an archaeologist who meets the Secretary of the Interior's Standards to determine significance prior to any ground-disturbing activities. If resources are determined significant or unique through Phase II testing, and site avoidance is not possible, appropriate site-specific mitigation measures shall be undertaken. These might include a Phase III data recovery program implemented	

Table 1-4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
			by a qualified archaeologist and performed in accordance with the Office of Historical Preservation's "Archaeological Resource Management Reports (ARMR): Recommended Contents and Format" (OHP 1990) and "Guidelines for Archaeological Research Designs" (OHP 1991).	
		CUL-6	If the archaeological assessment did not identify archaeological resources but found the area to be highly sensitive for archaeological resources, a qualified archaeologist shall monitor all ground-disturbing construction and pre-construction activities in areas with previously undisturbed soil. The archaeologist shall inform all construction personnel prior to construction activities of the proper procedures in the event of an archaeological discovery. The training shall be held in conjunction with the project's initial on-site safety meeting and shall explain the importance and legal basis for the protection of significant archaeological resources. In the event that archaeological resources (artifacts or features) are exposed during ground-disturbing activities, construction activities in the immediate vicinity of the discovery shall be halted while the resources are evaluated for significance by an archaeologist who meets the Secretary's Standards, and tribal consultation shall be conducted in the case of a tribal resource. If the discovery proves to be significant, the long-term disposition of any collected materials should be determined in consultation with the affiliated tribe(s), where relevant; this could include curation with a recognized scientific or educational repository, transfer to the tribe, or respectful reinternment in an area designated by the tribe.	
		CUL-7	If an Archaeological Resources Assessment does not identify potentially significant archaeological resources but the site has moderate sensitivity for archaeological resources (Mitigation Measure CUL-4), an archaeologist who meets the Secretary's Standards shall be retained on call. The archaeologist shall inform all construction personnel prior to construction activities about the proper procedures in the event of an archaeological discovery. The pre-	

Table 1-4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		construction training shall be held in conjunction with the project's initial on-site safety meeting and shall explain the importance and legal basis for the protection of significant archaeological resources. In the event that archaeological resources (artifacts or features) are exposed during ground-disturbing activities, construction activities in the immediate vicinity of the discovery shall be halted while the on-call archaeologist is contacted. The resource shall be evaluated for significance and tribal consultation shall be conducted, in the case of a tribal resource. If the discovery proves to be significant, the long-term disposition of any collected materials should be determined in consultation with the affiliated tribe(s), where relevant.	
Impact 5.4-3: Development in accordance with the General Plan Update could potentially disturb human remains.	Less than significant	No mitigation measures are required.	Less than significant
5.5 ENERGY			
Impact 5.5-1: Implementation of the General Plan Update would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources.	Less than significant	No mitigation measures are required.	Less than significant
Impact 5.5-2: The proposed General Plan Update would not conflict with or obstruct a state or local plan for renewable energy or energy	Less than significant	No mitigation measures are required.	Less than significant
5.6 GEOLOGY AND SOILS			
Impact 5.6-1: Plan Area residents or occupants, visitors, etc. would be subject to potential seismic-related hazards.	Less than significant	No mitigation measures are required.	Less than significant
Impact 5.6-2: Unstable geologic unit or soils conditions, including soil erosion, could result from development of the project.	Less than significant	No mitigation measures are required.	Less than significant

1. Executive Summary

Table 1-4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.6-3: Future development in the Plan Area would require connection to the City's sewer system.	Less than significant	No mitigation measures are required.	Less than significant
Impact 5.6-4: Future development in the Plan Area that would be accommodated by the General Plan Update could impact known and unknown paleontological resources	Potentially significant	GEO-1 **High Sensitivity.** Projects involving ground disturbances in previously undisturbed areas mapped as having "high" paleontological sensitivity shall be monitored by a qualified paleontological monitor on a full-time basis, under the supervision of the Qualified Paleontologist. Monitoring shall include inspection of exposed sedimentary units during active excavations within sensitive geologic sediments. The monitor shall have authority to temporarily divert activity away from exposed fossils to evaluate the significance of the find and, if the fossils are determined to be significant, professionally and efficiently recover the fossil specimens and collect associated data. The paleontological monitor shall use field data forms to record pertinent location and geologic data, measure stratigraphic sections (if applicable), and collect appropriate sediment samples from any fossil localities. GEO-2 **Low-to-High Sensitivity.** Prior to issuance of a grading permit for projects involving ground disturbance in previously undisturbed areas mapped with "low-to-high" paleontological sensitivity (see Figure 5.6-3), the project applicant shall consult with a geologist or paleontologist to confirm whether the grading would occur at depths that could encounter highly sensitive sediments for paleontological resources. If confirmed that underlying sediments may have high sensitivity, construction activity shall be monitored by a qualified paleontologist. The paleontologist shall have the authority to halt construction during construction activity as outlined in Mitigation Measure GEO-3**.** GEO-3 **All Projects**. In the event of any fossil discovery, regardless of depth or geologic formation, construction work shall halt within a 50-foot radius of the find until its significance can be determined by a Qualified Paleontologist. Significant fossils shall be recovered, prepared to the point of curation, identified by qualified	Less than significant

Table 1-4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
			experts, listed in a database to facilitate analysis, and deposited in a designated paleontological curation facility in accordance with the standards of the Society of Vertebrate Paleontology (2010). The most likely repository is the Natural History Museum of Los Angeles County (NHMLA). The repository shall be identified, and a curatorial arrangement shall be signed, prior to collection of the fossils.	
5.7 GREENHOUSE GAS EMISSIONS				
Impact 5.7-1: Implementation of the proposed General Plan Update would result in a decrease in GHG emissions in horizon year 2045 from existing baseline but may not meet the long-term GHG reduction goal under Executive Order S-03-05.	Potentially significant	GHG-1	The City of Santa Ana shall update the Climate Action Plan (CAP) every five years to ensure the City is monitoring the plan's progress toward achieving the City's greenhouse gas (GHG) reduction target and to require amendment if the plan is not achieving the specified level. The update shall consider a trajectory consistent with the GHG emissions reduction goal established under Executive Order S-03-05 for year 2050 and the latest applicable statewide legislative GHG emission reduction that may be in effect at the time of the CAP update (e.g., Senate Bill 32 for year 2030). The CAP update shall include the following: ▪ GHG inventories of existing and forecast year GHG levels. ▪ Tools and strategies for reducing GHG emissions to ensure a trajectory with the long-term GHG reduction goal of Executive Order S-03-05. ▪ Plan implementation guidance that includes, at minimum, the following components consistent with the proposed CAP: ▪ Administration and Staffing ▪ Finance and Budgeting ▪ Timelines for Measure Implementation ▪ Community Outreach and Education ▪ Monitoring, Reporting, and Adaptive Management ▪ Tracking Tools	Significant and unavoidable

Table 1-4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.7-2: The General Plan Update would not conflict with the plans adopted for the purpose of reducing GHG emissions.	Less than significant	No mitigation measures are required.	Less than significant
5.8 HAZARDS AND HAZARDOUS MATERIALS			
Impact 5.8.1: Project construction and operations would involve the transport, use, and/or disposal of hazardous materials.	Less than significant	No mitigation measures are required.	Less than significant
Impact 5.8-2: The plan area includes 555 sites included on a list of hazardous materials compiled pursuant to Government Code Section 65962.5 that could create a significant hazard to the public or the environment.	Less than significant	No mitigation measures are required.	Less than significant
Impact 5.8-3: Santa Ana is in the vicinity of an airport or within the jurisdiction of an airport land use plan.	Less than significant	No mitigation measures are required.	Less than significant
Impact 5.8-4: Buildout of the General Plan Update could affect the implementation of an emergency responder or evacuation plan.	Less than significant	No mitigation measures are required.	Less than significant
Impact 5.8-5: ta Ana is not in a designated fire hazard zone, and implementation of the General Plan Update will not expose structures and/or residences to wildland fire danger.	Less than significant	No mitigation measures are required.	Less than significant
5.9 HYDROLOGY AND WATER QUALITY			
Impact 5.9-1: Projects pursuant to the General Plan Update would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.	Less than significant	No mitigation measures are required.	Less than significant

Table 1-4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.9-2: Development pursuant to the General Plan Update would increase the demand on groundwater use but would not impede sustainable groundwater management of the basin.	Less than significant	No mitigation measures are required.	Less than significant
Impact 5.9-3: Development pursuant to the General Plan Update will increase the amount of pervious surfaces in the plan area, but could substantially increase the rate or amount of surface runoff in some focus areas in a manner which would result in flooding off-site or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems.	Less than significant	No mitigation measures are required.	Less than significant
Impact 5.9-4: In flood hazard, tsunami, or seiche zones, development pursuant to the General Plan Update would not risk release of pollutants due to project inundation or impede or redirect flood flows	Less than significant	No mitigation measures are required.	Less than significant
Impact 5.9-5: Development pursuant to the General Plan Update would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	Less than significant	No mitigation measures are required.	Less than significant
5.10 LAND USE AND PLANNING			
Impact 5.10-1: Implementation of the General Plan Update would not divide an established community.	Less than significant	No mitigation measures are required.	Less than significant
Impact 5.10-2: The General Plan Update would be consistent with the Airport Environs Land Use Plan for the John Wayne Airport	Less than significant	No mitigation measures are required.	Less than significant

Table 1-4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.10-3: Implementation of the General Plan Update would be consistent with the goals of the Southern California Association of Governments' RTP/SCS.	Less than significant	No mitigation measures are required.	Less than significant
Impact 5.10-4: Implementation of the General Plan Update would be consistent with the OCTA Congestion Management Plan	Less than significant	No mitigation measures are required.	Less than significant
5.11 MINERAL RESOURCES			
Impact 5.11-1: Project implementation would not result in the loss of availability of a known mineral resource.	Less than significant	No mitigation measures are required.	Less than significant
5.12 NOISE			
Impact 5.12-1: Construction activities associated with buildout of the plan area would result in temporary noise increases at sensitive receptors.	Potentially significant	N-1 Construction contractors shall implement the following measures for construction activities conducted in the City of Santa Ana. Construction plans submitted to the City shall identify these measures on demolition, grading, and construction plans submitted to the City: The City of Santa Ana Planning and Building Agency shall verify that grading, demolition, and/or construction plans submitted to the City include these notations prior to issuance of demolition, grading and/or building permits. ▪ Construction activity is limited to the hours: Between 7 AM to 8 PM Monday through Saturday, as prescribed in Municipal Code Section 18-314(e). Construction is prohibited on Sundays. ▪ During the entire active construction period, equipment and trucks used for project construction shall use the best-available noise control techniques (e.g., improved mufflers, equipment re-design, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds), wherever feasible. ▪ Impact tools (e.g., jack hammers and hoe rams) shall be hydraulically or electrically powered wherever possible. Where the use of pneumatic tools	Significant and unavoidable

Table 1-4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		is unavoidable, an exhaust muffler on the compressed air exhaust shall be used along with external noise jackets on the tools. ■ Stationary equipment such as generators and air compressors shall be located as far as feasible from nearby noise-sensitive uses. ■ Stockpiling shall be located as far as feasible from nearby noise-sensitive receptors. ■ Construction traffic shall be limited—to the extent feasible—to approved haul routes established by the City Planning and Building Agency. ■ At least 10 days prior to the start of construction activities, a sign shall be posted at the entrance(s) to the job site, clearly visible to the public, that includes permitted construction days and hours, as well as the telephone numbers of the City's and contractor's authorized representatives that are assigned to respond in the event of a noise or vibration complaint. If the authorized contractor's representative receives a complaint, he/she shall investigate, take appropriate corrective action, and report the action to the City. ■ Signs shall be posted at the job site entrance(s), within the on-site construction zones, and along queueing lanes (if any) to reinforce the prohibition of unnecessary engine idling. All other equipment shall be turned off if not in use for more than 5 minutes. ■ During the entire active construction period and to the extent feasible, the use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only. The construction manager shall use smart back-up alarms, which automatically adjust the alarm level based on the background noise level, or switch off back-up alarms and replace with human spotters in compliance with all safety requirements and laws. ■ Erect temporary noise barriers (at least as high as the exhaust of equipment and breaking line-of-sight between noise sources and sensitive receptors), as necessary and feasible, to maintain construction noise levels at or below the performance standard of 80 dBA Leq. Barriers shall	

Table 1-4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
			be constructed with a solid material that has a density of at least 4 pounds per square foot with no gaps from the ground to the top of the barrier.	
Impact 5.12-2: Buildout of the plan area would cause a substantial traffic noise increase on local roadways and could locate sensitive receptors in areas that exceed established noise standards.	Potentially significant	No mitigation measures are required.		Significant and unavoidable
Impact 5.12-3: Buildout of the individual land uses and projects for implementation of the GPU may expose sensitive uses to excessive levels of groundborne vibration.	Potentially significant	N-2	Prior to issuance of a building permit for a project requiring pile driving during construction within 135 feet of fragile structures, such as historical resources, 100 feet of non-engineered timber and masonry buildings (e.g., most residential buildings), or within 75 feet of engineered concrete and masonry (no plaster); or a vibratory roller within 25 feet of any structure, the project applicant shall prepare a noise and vibration analysis to assess and mitigate potential noise and vibration impacts related to these activities. This noise and vibration analysis shall be conducted by a qualified and experienced acoustical consultant or engineer. The vibration levels shall not exceed Federal Transit Administration (FTA) architectural damage thresholds (e.g., 0.12 inches per second [in/sec] peak particle velocity [PPV] for fragile or historical resources, 0.2 in/sec PPV for non-engineered timber and masonry buildings, and 0.3 in/sec PPV for engineered concrete and masonry). If vibration levels would exceed this threshold, alternative uses such as drilling piles as opposed to pile driving and static rollers as opposed to vibratory rollers shall be used. If necessary, construction vibration monitoring shall be conducted to ensure vibration thresholds are not exceeded.	Less than significant
		N-3	New residential projects (or other noise sensitive uses) located within 200 feet of existing railroad lines shall be required to conduct a groundborne vibration and noise evaluation consistent with Federal Transit Administration (FTA) approved methodologies.	
		N-4	During the project-level California Environmental Quality Act (CEQA) process for industrial developments under the General Plan Update or other projects that	

Table 1-4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		could generate substantial vibration levels near sensitive uses, a noise and vibration analysis shall be conducted to assess and mitigate potential noise and vibration impacts related to the operations of that individual development. This noise and vibration analysis shall be conducted by a qualified and experienced acoustical consultant or engineer and shall follow the latest CEQA guidelines, practices, and precedents.	
Impact 5.12-4: The proximity of the plan area to an airport or airstrip would not result in exposure of future residents and/or workers to excessive airport-related noise.	Less than significant	No mitigation measures are required.	Less than significant
5.13 POPULATION AND HOUSING			
Impact 5.13-1: The GPU would directly induce substantial unplanned population growth.	Potentially significant	No feasible mitigation measure available.	Significant and unavoidable
Impact 5.13-2: The GPU would provide more housing opportunities than currently exist. Therefore, implementation of the GPU would not displace people and/or housing.	No impact	No mitigation measures are required.	No impact
5.14 PUBLIC SERVICES			
FIRE PROTECTION AND EMERGENCY SERVICES			
Impact 5.14-1: The General Plan Update would introduce new structures, residents, and workers into the OCFA service boundaries, thereby increasing the requirement for fire protection facilities and personnel.	Less than significant	No mitigation measures are required.	Less than significant

Table 1-4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
POLICE PROTECTION			
Impact 5.14-2: The General Plan Update would introduce new structures, residents, and workers into the Santa Ana Police Department service boundaries, thereby increasing the requirement for police protection facilities and personnel.	Less than significant	No mitigation measures are required.	Less than significant
SCHOOL SERVICES			
Impact 5.14-3: The General Plan Update would generate additional students who would impact the school enrollment capacities of the Santa Ana Unified School District, Garden Grove Unified School District, and Orange Unified School District.	Less than significant	No mitigation measures are required.	Less than significant
LIBRARY SERVICES			
Impact 5.14-4: The General Plan Update would allow for up to 22,361 additional residents in the General Plan Update plan area, increasing the service needs for the Main Library and the Newhope Library Learning Center.	Less than significant	No mitigation measures are required.	Less than significant
5.15 RECREATION			
Impact 5.15-1: The General Plan update would generate additional residents that would increase the use of existing park and recreational facilities.	Less than significant	No mitigation measures are required.	Less than significant
Impact 5.15-2: Project implementation would result in environmental impacts to provide new and/or expanded recreational facilities.	Less than significant	No mitigation measures are required.	Less than significant

Table 1-4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.16 TRANSPORTATION			
Impact 5.16-1: The General Plan Update is consistent with adopted programs, plans, and policies addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	Less than significant	No mitigation measures are required.	Less than significant
Impact 5.16-2: General Plan Update implementation would result in a reduction of vehicle miles traveled per service population (VMT/SP) in comparison to existing City conditions, and would achieve a VMT/SP at least 15 percent lower than the countywide VMT/SP.	Less than significant	No mitigation measures are required.	Less than significant
Impact 5.16-3: Circulation improvements associated with future development that would be accommodated by the General Plan Update would be designed to adequately address potentially hazardous conditions (sharp curves, etc.), potential conflicting uses, and emergency access.	Less than significant	No mitigation measures are required.	Less than significant
5.17 TRIBAL CULTURAL RESOURCES			
Impact 5.17-1: The proposed project could cause a substantial adverse change in the significance of a tribal cultural resource 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).	Potentially significant	Mitigation Measures CUL-4 through CUL-7.	Less than significant
Impact 5.17-2: The proposed project could cause a substantial adverse change in the significance of a tribal cultural resource that is determined by the lead agency to be significant pursuant to criteria in Public Resources Code Section 5024.1(c).	Potentially significant	Mitigation Measures CUL-4 through CUL-7.	Less than significant

1. Executive Summary

Table 1-4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.18 UTILITIES AND SERVICE SYSTEMS			
WASTEWATER TREATMENT AND COLLECTION			
Impact 5.18-1: Development pursuant to the GPU would require or result in the relocation or construction of new or expanded wastewater facilities.	Potentially significant	No mitigation measures are required.	Less than significant
Impact 5.18-2: OCSD and OCWD have adequate capacity to serve development pursuant to the GPU in addition to the providers existing commitments.	Less than significant	No mitigation measures are required.	Less than significant
WATER SUPPLY AND DISTRIBUTION			
Impact 5.18-3: Development pursuant to the GPU would require or result in the relocation or construction of new or expanded water facilities.	Less than significant	No mitigation measures are required.	Less than significant
Impact 5.18-4: Water supply would be adequate to meet development pursuant to the GPU.	Less than significant	No mitigation measures are required.	Less than significant
STORM DRAINAGE			
Impact 5.18-5: Existing and/or proposed stormwater drainage facilities would be able to accommodate proposed development pursuant to the GPU.	Less than significant	No mitigation measures are required.	Less than significant
SOLID WASTE			
Impact 5.18-6: Existing and/or proposed solid waste facilities would be able to accommodate development pursuant to the GPU and comply with related solid waste regulations.	Less than significant	No mitigation measures are required.	Less than significant

Table 1-4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
OTHER UTILITIES			
Impact 5.18-7: Development pursuant to the GPU would require or result in the relocation or construction of new or expanded electric power and natural gas.	Less than significant	No mitigation measures are required.	Less than significant

1. Executive Summary

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2. Introduction

2.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

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

Because approval of the proposed Santa Ana General Plan update is a discretionary action by a public agency, the project is subject to the CEQA review process, and the City of Santa Ana, as the first public agency to act on the project, becomes the lead agency for the project. Pursuant to CEQA Section 21067, the lead agency means "the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment." As the CEQA lead agency, the City of Santa Ana has the principal responsibility for approval of the General Plan update; determining the method of CEQA compliance; preparing and certifying the EIR that describes potential environmental impacts of the GPU; providing a Statement of Overriding Considerations for all environmental impacts that cannot be mitigated to a less than significant level; and adopting a Mitigation Monitoring Plan to ensure that all required mitigation measures are implemented during the course of the project.

This Draft PEIR has been prepared in accordance with requirements of the:

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

The overall purpose of this Draft PEIR is to inform the lead agency, responsible agencies, decision makers, and the general public of the environmental effects of implementation of the General Plan update. This Draft PEIR addresses the potential environmental effects of the project, including effects that may be significant and adverse; evaluates a number of alternatives to the project; and identifies mitigation measures to reduce or avoid adverse effects. The intent of this Draft PEIR is to provide sufficient information on the potential environmental impacts of the General Plan update to allow the City of Santa Ana to make an informed decision regarding approval of

the project. Specific discretionary actions to be reviewed by the City are described in Section 3.4, *Intended Uses of the EIR*.

2.2 NOTICE OF PREPARATION

The City of Santa Ana determined that a Program EIR would be required for this project and issued a Notice of Preparation (NOP) on February 26, 2020 (see Volume II, Appendix A), to the State Clearinghouse, responsible agencies, and interested parties. Comments received during the public review period, which extended from February 26, 2020, to March 27, 2020, are in Appendix A.

The NOP process helps determine the scope of the environmental issues to be addressed in the Draft PEIR. Based on this process, certain environmental categories were identified as having the potential to result in significant impacts. Issues considered Potentially Significant are addressed in Chapter 5, *Environmental Analysis*, of this Draft PEIR, but issues identified as Less Than Significant or No Impact are not. Refer to Chapter 8, *Impacts Found Not to Be Significant*, in this PEIR for a discussion of how these initial determinations were made.

Ten agencies/interested parties responded to the NOP. This Draft PEIR has taken into consideration those responses. Table 2-1 summarizes the issues identified by the commenting agencies, along with a reference to the section(s) of this Draft PEIR where the issues are addressed.

Table 2-1 NOP Comment Summary

Commenting Agency/Person	Date	Comment Type	Comment Summary	Issue Addressed In:
Agencies				
The Metropolitan Water District of Southern California (Metropolitan) Sean Carlson, Team Manager Environmental Planning Section; Jolene Ditmar, Assistant Environmental Specialist I	3/16/20	▪ Utilities and Services Systems	▪ Provides an introduction that outlines the project and Metropolitan's service area and mission. ▪ States that it owns and operates the Orange County Feeder, East Orange County Feeder 2, and Santa Ana Cross Feeder pipelines in the plan area and provides information on these pipelines. ▪ Concerned about indirect effects to Metropolitan's facilities. ▪ States that future development and land use conditions associated with the project must not restrict any of Metropolitan's day-to-day operations, access, or repair of the facilities. States that Metropolitan must be allowed to maintain its rights-of-way and requires unobstructed access to its facilities. ▪ Requires that any design plans for any activities in the area of Metropolitan's pipelines or facilities be submitted for review and written approval. Metropolitan will not permit procedures that could subject the pipeline to excessive vehicle, impact, or vibration loads. ▪ Metropolitan attached a map with locations of its infrastructure and the "Guidelines for Improvements and Construction Projects Proposed in the Area of Metropolitan's Facilities and Rights-of-Way"	▪ Section 5.18, *Utilities and Service Systems* ▪ The enforcement of unobstructed access to Metropolitan's facilities is outside the scope of this PEIR.

Table 2-1 NOP Comment Summary

Commenting Agency/Person	Date	Comment Type	Comment Summary	Issue Addressed In:
South Coast Air Quality Management District (AQMD) Lijin Sun, J.D., Program Supervisor CEQA IGR	3/17/20	▪ Air Quality	▪ Requests that the Program EIR be submitted to the agency directly, including all appendices or technical documents and electronic versions of all air quality modeling and health risk assessment files. ▪ Recommends that the lead agency use the South Coast AQMD's *CEQA Air Quality Handbook* for its air quality analysis and its more recent guidance. ▪ Recommends the use of CalEEMod land use emissions software. ▪ States that the most significant air quality challenge in the Basin is to achieve additional specified reductions in NOx emission. Provides a link to the 2016 Air Quality Management Plan. ▪ Recommends the review of the "Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning" when making local planning and land use decisions. ▪ Requests that the lead agency compare emissions to the recommended regional significance thresholds and recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LSTs). Recommends that the lead agency perform a localized analysis by either using the LSTs developed by South Coast AQMD or performing dispersion modeling as necessary. ▪ States that when specific development is reasonably foreseeable as result of the goals, policies, and guidelines in the GPU, the lead agency should identify any potential adverse air quality impacts and sources of air pollution that could occur using its best efforts to find out and a good-faith effort at full disclosure in the EIR. Quantifying emissions should include both construction and operational activities and indirect sources. If the project generates or attracts vehicular trips, especially heavy-duty diesel-fueled vehicles, it is recommended that the lead agency perform a mobile source health risk assessment. An analysis of all toxic air contaminant impacts due to the use of equipment potentially generating such air pollutants should also be included. ▪ Recommends that the lead agency conduct a mobile source health risk assessment (HRA) in the Program EIR to disclose the potential health risks of sensitive receptors being exposed to toxic emissions within close proximity to freeways. ▪ Provides a list of four resources that are available when identifying possible mitigation measures. ▪ Discusses health risks reduction strategies particularly with respect to air filtration systems. ▪ States that the Program EIR shall include a discussion of alternatives and provide sufficient information about	▪ The Draft PEIR including technical appendices will be submitted to the South Coast AQMD. The agency will have a 45-day comment period to review the document. ▪ Section 5.2, *Air Quality* ▪ *Chapter 7,* Alternatives ▪ A detailed mobile health risk assessment was not prepared because it is beyond the scope of this program EIR. Section 5.2, Air Quality, qualitatively discusses potential impacts of diesel particulate matter due to planned development. Also, individual projects would be required to undergo individual CEQA review,

2. Introduction

Table 2-1 NOP Comment Summary

Commenting Agency/Person	Date	Comment Type	Comment Summary	Issue Addressed In:
			each alternative to allow meaningful evaluation, analysis, and comparison with the GPU. ▪ States that if permits from South Coast AQMD are required, South Coast AQMD should be identified as a responsible agency. Provides a link to South Coast AQMD permits web page and contact information. ▪ Provides a brief discussion on data sources for AQMD rules and relevant air quality reports and data.	potentially including a detailed health risk assessment for air toxics.
Gabrieleno Band of Mission Indians – Kizh Nation Andrew Salas, Chairperson; Brandy Salas, Admin Specialist	3/20/20	▪ Tribal Cultural Resources	▪ States the GPU location is within their ancestral tribal territory and requests a consultation with the lead agency to discuss the project and the surrounding location in further detail.	▪ Section 5.17, *Tribal Cultural Resources*
Airport Land Use Commission (ALUC) Lea U. Choum, Executive Officer; Julie Fitch, Land Use Manager John Wayne Airport Orange County	3/26/20	▪ Building Heights ▪ Noise	▪ ALUC states that the City of Santa Ana is within the Airport Environs Land Use Plan (AELUP) notification area for John Wayne Airport (JWA). ▪ States that the EIR and General Plan update should address height restrictions and imaginary surfaces by discussing FAA Federal Aviation Regulation Part 77 as the criteria for determining height restrictions for projects within the airport planning area. The General Plan update should include height policy language and a mitigation measure in the EIR that states that no building will be allowed to penetrate the Federal Aviation Regulation Part 77 imaginary surfaces for JWA. ▪ States that structures more than 200 feet above ground level require filing with the FAA and ALUC notification and must comply with applicable procedures and regulations. ▪ Recommends that the City consider a mitigation and condition of approval specifying the 200 feet above ground level height threshold. ▪ States that portions of Santa Ana fall within the 60 to 65 dB CNEL noise contours for JWA, including a portion of the 55 Freeway/Dryer Road planning area. ▪ Recommends that the PEIR and General Plan update include policies and mitigations for development within the noise contours, especially if mixed-use or residential development would be permitted. ▪ States that all residential units within the 65 dB CNEL contour are typically inconsistent in the area unless it can be shown conclusively that such units are sufficiently sound attenuated. ▪ Recommends that residential uses are not permitted within the 65dB CNEL contour. Strongly recommends that residential units within the 60dB CNEL contour be limited or excluded.	▪ Section 5.8, *Hazards and Hazardous Materials* ▪ Section 5.10, *Land Use and Planning* ▪ Section 5.12, *Noise*

Table 2-1 NOP Comment Summary

Commenting Agency/Person	Date	Comment Type	Comment Summary	Issue Addressed In:
			▪ Recommends that the PEIR and General Plan update identify if the development of heliports will be allowed. Proposals for new heliports must be submitted to ALUC. ▪ Recommends adding specified language to the General Plan update and inclusion as mitigation measure in the EIR to address consistency with the AELUP for heliports. ▪ Recommends that the City include a policy in the General Plan update and a mitigation measure in the EIR that states that the City shall refer projects to the Airport Land Use Commission (ALUC) for Orange County as required by Section 21676 of the California Public Utilities Code. ▪ Requests that referrals for determinations be submitted to the ALUC after the City's Planning Commission hearing and before the City Council action.	
California Department of Fish & Wildlife David Mayer, Acting Environmental Program Manager South Coast Region; Jessie Lane, Environmental Scientist	3/26/20	▪ Biological Resources	▪ Provides an introduction that describes its role as a trustee agency and provides a project description summary that describes special status species and species of special concern that have potential to occur. ▪ CDFW agrees that a Program Environmental Impact Report is appropriate for the project. ▪ CDFW describes potential impacts to the Santa Ana River, and states that the focus area along West Santa Ana Boulevard intersects with the Santa Ana River corridor and adjacent open space areas. States that development within the focus area may have effects on riparian habitat and open space. ▪ CDFW provides recommendations to minimize significant impacts. Historically the Santa Ana River supported southern California steelhead. Recommends that the PEIR include an analysis of proposed major stream crossings in the context of fish passage. ▪ CDFW opposes any development or conversion that would reduce wetland acreage or wetland habitat value unless project mitigation ensures "no net loss" of either wetland habitat values or acreage. States that all wetlands and watercourses should be retained and provided with substantial setbacks. Mitigation measures to compensate for impacts to mature riparian corridors must be included in the PEIR and must compensate for the loss of function and value of the wildlife corridor. ▪ CDFW considers adverse impacts to a species protected by the California Endangered Species Act (CESA) to be significant without mitigation. CDFW recommends appropriate take authorization under CESA prior to implementing the project. Appropriate authorization from CDFW may include an incidental take permit.	▪ Section 5.3, *Biological Resources*

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Table 2-1 NOP Comment Summary

Commenting Agency/Person	Date	Comment Type	Comment Summary	Issue Addressed In:
			▪ CDFW identifies mitigation for project-related biological impacts. CDFW states that the PEIR should include measures to fully avoid and otherwise protect Rare Natural Communities from project-related impacts. For proposed preservation and/or restoration, the PEIR should include measures to perpetually protect the targeted habitat values. ▪ CDFW requests that any special status species and natural communities detected during surveys are reported to the California Natural Diversity Database. CDFW further states that the project would necessitate an assessment of filing fees.	
City of Tustin Elizabeth A. Binsack, Community Development Director; Scott Reekstin, Principal Planner; Krys Saldivar, Public Works Manager; Vera Tiscareno, Executive Assistant	3/26/20	▪ Land Use and Planning ▪ Recreation ▪ Alternatives ▪ Public Services ▪ Population and Housing ▪ Noise ▪ Transportation	▪ Concerned with the significant changes in land use along Red Hill Avenue and Dyer Road, the Bowery project, or those that have occurred recently with the approval and construction of the Heritage project at 2001 E. Dyer Rd. States that this could result in significant and cumulative impacts to traffic and parks. ▪ States that the EIR should include detailed overall projections of the anticipated change to land uses. ▪ States that it is unclear how the development potential identified in Table 1 of the NOP was calculated. No technical analyses or supporting documentation was provided in the NOP. ▪ States that there will be capacity issues that need to be addressed in accommodating the proposed development. ▪ States that no project alternatives were identified in the NOP. Wants to know how the development potential in Table 1 of the NOP was concluded to be the preferred option. Requests that the PEIR identify project alternatives and provide the technical analyses that identify that the proposed development can be accommodated with the appropriate facilities and levels of service. ▪ States that there appears to have been no technical evaluation of the proposed General Plan update provided to the public. ▪ States that community outreach has identified parks and open space as an issue and the project alternatives presented through community outreach do not identify any open space within the 55 Freeway/Dyer Road Focus Area. Further states that it is unclear if the Santa Ana General Plan update would include additional parkland or open space and states that no additional open space is proposed in the 55 Freeway/Dyer Road Focus Area. States that the City of Santa Ana should require land for park and recreational purposes to meet the City's minimum standard. Further provides a discussion of parkland need in the focus area.	▪ Chapter 3, *Project Description* ▪ Chapter 4, *Environmental Setting* ▪ Section 5.10, *Land Use and Planning* ▪ Section 5.12, *Noise* ▪ Section 5.13, *Population and Housing* ▪ Section 5.14, *Public Services* ▪ Section 5.15, *Recreation* ▪ Section 5.16, *Transportation* ▪ *Section 5.18, Utilities and Service Systems* ▪ Chapter 7, *Alternatives* ▪ Appendices ▪ The City is committed to working closely with cities located adjacent to General Plan Focus Areas when preparing the City of Santa

Table 2-1 NOP Comment Summary

Commenting Agency/Person	Date	Comment Type	Comment Summary	Issue Addressed In:
			▪ States that the City of Santa Ana parkland goal falls short of the "widely held minimum standard" of three acres per 1,000 residents under the Quimby Act. Provides a table of parkland goals of other cities in Orange County. ▪ States that there is a fragmented and absent sidewalk network and no parkland facilities within the 55 Freeway/Dyer Road Focus Area, and further states that the 55 Freeway creates a barrier to those properties proposed for residential uses. ▪ States that Veterans Sports Park at Tustin Legacy will be three times larger and about half the distance from the 55 Freeway/Dyer Road Focus Area than the closest park in Santa Ana and will attract park goers. Requests that the analysis in the EIR should consider the quality, amenities, and attractiveness of nearby parks when estimating park usage. States that if sufficient parkland is not provided in Santa Ana, then it may negatively impact and overburden parkland facilities in Tustin, and impacts must be mitigated. Requests that analysis in the PEIR of proposed compliance with the City of Santa Ana park standards should focus on the potential to physically deteriorate existing and future recreational facilities in the City of Tustin. ▪ Concerned about the lack of commitment to open space and parkland given the 55 Freeway/Dyer Road Focus Area's adjacency to the City of Tustin and Tustin Legacy. ▪ Requests that a comprehensive study of parkland demand be conducted to evaluate the impacts of the General Plan buildout on Tustin facilities. Recommends that the minimum park facilities be accommodated within the 55 Freeway/Dyer Road Focus Area, and that thresholds tied to development and upzoning should be required to ensure development of parkland facilities within the Focus Area. ▪ Requests that the PEIR include a study that analyzes how far residents in a suburban community are willing to travel to reach a community park and analyze the distance from other similar Santa Ana residential neighborhoods to their nearest community park as a comparison. ▪ Provides an overview of the 55 Freeway/Dyer Road Focus Area and two alternatives. States that it is unclear where the housing units noted in Table 1 for the 55 Freeway/Dyer Road Focus Area will be located and states that it appear to run contrary to the Focus Area goal of protecting the industrial and office employment base. Requests an accurate representation of the vision for the area along with technical analyses to justify that development can be accommodated. States that a residential unit cap may	Ana's Parks and Recreation Master Plan to ensure that the Dyer/55 Focus Area and other growth areas of the City provide additional recreation, parks, and core services essential in making complete communities. In addition, the City will identify additional funding sources from new development projects to procure land or in-lieu fees for installation of parks in the immediate vicinity of proposed development in order to minimize the potential for impacts onto adjacent communities with regards to parks and open space utilization. The inclusion of publicly accessible open space is also part of the City of Santa Ana's

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Table 2-1 NOP Comment Summary

Commenting Agency/Person	Date	Comment Type	Comment Summary	Issue Addressed In:
			be needed similar to the Irvine Business Complex. ▪ States that the NOP did not mention affordable housing. Requests that potential density bonus units should be identified and evaluated for their impacts when evaluating buildout capacity. ▪ States that the General Plan update should identify how land uses such as residential and industrial will co-exist directly adjacent to one another. States that facilities improvements required to "enhance livability and promote healthy lifestyles" should be identified and a course of action provided for implementation. ▪ States that the 55 Freeway/Dyer Road Focus Area is within the John Wayne Airport flight path and 65 dBA and 60 dBA CNEL contours. States that areas falling within the 65 dBA CNEL noise contours should be clearly identified in the PEIR and restricted to not allow residential development. States that mitigation measures need to be identified that discuss how Policy 2.2, Stationary Related Noise, of the Noise Element from the General Plan Policy Framework will be achieved within the focus area. ▪ States that a Traffic Impact Analysis (TIA) is required. States that the TIA should include identified Tustin arterial roadways and intersections and identifies roadways and intersections that anticipate greatest impacts. ▪ States that the City of Tustin is not supportive of any additional traffic signals or median breaks on Red Hill Avenue. States that any development along Red Hill Avenue to serve future development will need to only allow right-turn in and right-turn out movements. ▪ States that any significant development or land use intensification in the 55 Freeway/Dyer Road Focus Area would likely require improvements along southbound Red Hill Avenue. ▪ States that any analysis of Tustin roads and intersections would need to comply with the most current City of Tustin methodology. States that analysis should consider cumulative traffic impacts and mitigation measures. ▪ Requests that the City of Tustin staff is given the opportunity to participate in the development of the TIA and review of the TIA prior to public release. ▪ Asks that all future CEQA notices be provided to the list of identified persons.	development standards for residential/ mixed use development projects to address open space and recreation needs. ▪ Please refer to Section 3.3.2.5 of Chapter 3, *Project Description,* for a detailed discussion on density bonus. ▪ The Draft PEIR is based on VMT analysis per the CEQA guidelines and City's adopted VMT thresholds. Intersection analysis is included in full the in Traffic Impact Study included as an appendix to the Draft PEIR. ▪ The Draft PEIR including technical appendices will be submitted to the provided list of contacts.
City of Orange Chad Ortlieb, Senior Planner	3/26/20	▪ Infrastructure ▪ Noise	▪ States that the City of Orange has interest in ensuring that the Draft PEIR addresses potential adverse impacts to Orange residents and infrastructure. ▪ Would appreciate the opportunity to consult on technical studies, including potential noise and transportation impacts.	▪ The Draft PEIR including technical appendices will be submitted to the City of

Table 2-1 NOP Comment Summary

Commenting Agency/Person	Date	Comment Type	Comment Summary	Issue Addressed In:
				Orange planning department. The agency will have a 45-day comment period to review the document.
Orange County Transportation Authority (OCTA) Dan Phu, Manager Environmental Programs; Hannah Allington, Planning Intern	3/26/20	▪ Transportation	▪ OCTA requests that the City coordinate with OCTA to maintain consistency between the Circulation Element and the Orange County Master Plan of Arterial Highways. ▪ States that First Street, Irvine Boulevard, Harbor Boulevard, Edinger Avenue, and Warner Avenue are part of the Congestion Management Program Highway System and should be analyzed as such for potential traffic impacts.	▪ Section 5.10, *Land Use and Planning* ▪ Section 5.17, *Transportation*
Southern California Association of Governments Anita Au, Associate Regional Planner Ping Chang, Manager Compliance and Performance Monitoring	3/27/20	▪ Land Use and Planning ▪ Population and Housing	▪ SCAG provides an overview of its role in reviewing regionally significant projects pursuant to CEQA. SCAG states that it has reviewed the NOP and provides contact information to send the environmental documentation when ready. ▪ SCAG requests that the EIR provide a consistency analysis with the RTP/SCS, lists RTP/SCS goals, and provides a format for the consistency analysis. ▪ SCAG discusses demographics and growth forecasts and provides a table of these forecasts for the SCAG region and City of Santa Ana for the years 2020, 2035 and 2040. ▪ SCAG recommends the review of the Final Program EIR for the 2016 RTP/SCS for guidance on mitigation measures.	▪ Section 5.10, *Land Use and Planning* ▪ Section 5.13, *Population and Housing*
Orange County Sanitation District (OCSD) Adam Nazaroff, Engineering Supervisor; Daniel Lee, Engineer; Gloria Ramos, Administrative Assistant	03/31/20	▪ Utilities and Service Systems	▪ OCSD recommends that a sewer study be performed in the future to assure there is adequate sewer capacity ▪ OCSD states that new or modified connection to OCSD sewer lines requires coordination with OCSD and may require a permit.	▪ Section 5.18, *Utilities and Service Systems*
Organizations				
Heninger Park President Ginelle Hardy	3/6/20	▪ Focus Area #1 ▪ Distribution Material	▪ States that South Main Street Focus Area #1 would potentially affect Heninger Park properties and homes on Sycamore. States that Focus Area #1 includes S. Broadway in Heninger Park. ▪ States that the Heninger Park neighborhood meeting	▪ Section 5.4, *Cultural Resources* ▪ This topic is not

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Table 2-1 NOP Comment Summary

Commenting Agency/Person	Date	Comment Type	Comment Summary	Issue Addressed In:
			would be an opportunity to present the General Plan update and EIR. Asks City Planner for ideas on how to disperse the information and provide printed informational flyers, tables, and maps.	related to the scope of the Draft PEIR.
Recupero and Associates, Inc. Mike Johnston	3/17/20	▪ GPU Schedule	▪ Asks about the timeline for the General Plan update and when it may be reviewed and approved by the City Council.	▪ This topic is not related to the scope of the Draft PEIR.
The Hoffman Company Justin Esayian, Senior Vice President	3/25/20	▪ Mailing list ▪ Scheduling and timing	▪ Asks to be added to the communication group to receive updates on the General Plan update progress. ▪ Asks when the General Plan update will be finalized. ▪ Asks if the public EIR scoping meeting on March 5 occurred and, if not, asks for information on plans to reschedule it.	▪ Will receive future notices related to the GPU PEIR
Rise Up Willowick Cynthia Guerra, Rise Up Williowick Member	3/27/20	▪ Land Use and Planning ▪ Open Space	▪ Provides a discussion of Rise Up Willowick's mission. States that a focus area for growth and development encompasses the Willowick Golf Course, a critical area of advocacy for the Coalition. States that land development needs to understand and meet needs of current residents. ▪ Surveyed residents and conducted community engagement for input on vision for Willowick, and their vision includes: (1) parks and open space; (2) affordable housing; and (3) community spaces. Further discusses median income and open space investment. ▪ Concerned about impacts of the General Plan update on open space. Concerned about the lack of assessment proposed in the EIR on the impact of open space in the city; the impact of incentivizing development in five focus areas at the expense of open space. ▪ States that Willowick is the last remaining large-scale open space site in Santa Ana, and EIR needs to address the impacts of depleting the resource. ▪ Provides recommendations for completing the EIR, including: work to accomplish the core values proposed in the General Plan update; include residents in development processes; work with City of Garden Grove for affordable housing and open space in Willowick; and City should add "Open-Space and Parkland" environmental impact category for EIR analyses.	▪ Section 5.10, *Land Use and Planning* ▪ Section 5.14, *Public Services* ▪ Section 5.15, *Recreation*

Table 2-1 NOP Comment Summary

Commenting Agency/Person	Date	Comment Type	Comment Summary	Issue Addressed In:
Public Law Center Ugochi Nicholson, Directing Attorney, Housing and Homelessness Prevention Unit	3/27/20	▪ Population and Housing	▪ Requests that projects that the City has approved and will seek to approve will not detrimentally affect the environment. ▪ Requests that the City ensure that the projects that it approves will affirmatively further fair housing and land use opportunities for its most vulnerable residents. ▪ Provides an overview of the Public Law Center's work. ▪ Asks the City to ensure that the environmental projects that it puts forward meet its core values and contribute to the need for cultural pride, good health, and equity and sustainability in land use development. ▪ States that there is a great need for housing for those who have very-low and extremely-low incomes and provides statistics for the City and Santa Ana Unified School District to demonstrate the need. ▪ States that evictions and displacement impose a high burden on school-aged children and their families. ▪ Requests that the City act in the best interests of its residents to provide clear guidance and direction for its EIR and ensure that it will protect its most vulnerable residents.	▪ Section 5.13, *Population and Housing* ▪ Fair housing is not related to the scope of the Draft PEIR.
IMG Construction Management Oscar Uranga, Principal	4/7/20	▪ Urban Neighborhood	▪ Asks about the proposed changes to the "Urban Neighborhood" land use designation.	▪ Chapter 3, *Project description*
Individuals				
Pat Coleman	3/27/20	▪ Cultural Resources ▪ Transportation ▪ Geology and Soils	▪ Requests that older city parks are included when assessing for historical significance and gives the example of Santiago Park. States that the original design and hardscape of early parks are worth preserving whenever possible. ▪ Requests that access management is added to level of service (LOS) evaluations for road design and modifications. States that City currently uses LOS to evaluate road modifications, which does not adequately cover safety, especially pedestrian safety. ▪ Requests that the recommendations and requirements of the Seismic Hazard Mapping Act of 1990 and the Special Publication 117A are considered for inclusion in the Safety Element. States the City's approach to evaluating seismic safety for new development is uneven, even though much of city is in a liquefaction zone. Cites an excerpt from SP 117A. ▪ Requests that a geology section is included in all CEQA studies for projects within the liquefaction zone. States that leaving the study for the permitting process keeps mitigation measures of significant impact out of public view. Provides an example of a project. ▪ States that the SHMA requires that the certified geological study and its professional certified review be	▪ Section 5.4, *Cultural Resources* ▪ This topic is not related to the scope of the Draft EIR. ▪ Section 5.6, *Geology and Soils*

Table 2-1 NOP Comment Summary

Commenting Agency/Person	Date	Comment Type	Comment Summary	Issue Addressed In:
			submitted to the appropriate state agency. States that this creates a reviewable public record and allows all professionals to own their recommendations.	
Lisa Ganz	3/16/20	▪ Land Use and Planning ▪ Density ▪ Open Space/Parks ▪ Transportation ▪ Public Services	▪ Concerned about adding more high-density housing in the City and states that the "Shared Vision" Plan should focus on quality of life initiatives, including open space/park, less congestion, and quality services. ▪ Housing element should be a part of the analysis, and Mandatory Topics should be looked at in its entirety. ▪ States that EIR needs to be thorough and explains discontent with the environmental analysis prepared for the MainPlace Mall Renovation. ▪ Opposes the plan to turn Grand and 17th into an Urban Neighborhood. Expresses concern regarding congestion and requests that zoning be maintained and incentivize new retail. ▪ States that 55/Dyer development will add more congestion to the crowded 55 freeway. ▪ States that the city needs better streets/timed lights, more open space, retail, reasonable housing that fits historic neighborhoods.	▪ Section 5.10, *Land Use and Planning* ▪ Section 5.13, *Population and Housing* ▪ Section 5.14, *Public Services* ▪ Section 5.15, Recreation ▪ Section 5.16, *Transportation*

2.3 SCOPING MEETING

Prior to preparation of the Draft PEIR, a public scoping meeting was held on March 5, 2020, to determine the concerns of responsible and trustee agencies and the community regarding the GPU. The scoping meeting was held at the City of Santa Ana and was attended by a number of community members and interested parties (see Appendix A for scoping meeting sign-in sheet). Table 2-2 summarizes the issues identified at the scoping meeting and references the section(s) of this Draft PEIR where the issues are addressed.

Table 2-2 Scoping Meeting Comment Summary

Commenting Agency/Person	Date	Comment Type	Comment Summary	Issue Addressed In:
Oral Comments at Scoping Meeting (Individuals)				
Albert Castillo	3/5/20	▪ Land Use Density ▪ Transportation ▪ Utilities and Service Systems ▪ Open Space	▪ Concerned that the General Plan buildout is too high and would add too many people to the city. ▪ Asked how the buildout will be accommodated within the city. ▪ Concerned about street closures, aging infrastructure, and traffic resulting from buildout and addition of new people. ▪ Stated that a cemetery on the Land Use Map is currently identified as green space and it should not be. ▪ Said that the city needs more open space. ▪ Asked how the General Plan update would benefit him and the existing community.	▪ Section 5-13 *Population and Housing* ▪ Section 5.16, *Transportation* ▪ Section 5.18, *Utilities and Service Systems* ▪ Section 5.15, *Recreation*
Irma Jauregui	3/5/20	▪ Land Use Density ▪ Open Space and Parks ▪ Quality of Life	▪ Asked if it is possible to lower buildout or population. Asked if the buildout numbers are a starting point or final. ▪ Asked if the City can add more parks/open space. States that city needs more open space and parks and that obesity is an issue in Santa Ana. ▪ Asked that terms be defined and that a glossary be provided. ▪ Asked if the EIR will address the impact to the quality of life of existing residents. Stated that the General Plan buildout is being done at the expense of the quality of life of existing residents. Wanted to make sure that existing residents are being cared for.	▪ Section 5.1, *Aesthetics* ▪ Section 5.2, *Air Quality* ▪ Section 5.12, *Noise* ▪ Section 5-13 *Population and Housing* ▪ Section 5.14, *Public Services* ▪ Section 5.15, *Recreation* ▪ Section 5.17, *Transportation* ▪ Section 5.18, *Utilities and Service Systems*
Diane Fradkin	3/5/20	▪ Transportation ▪ Phasing ▪ Outreach	▪ Asked about how streets get reclassified, and what does it mean when a street gets reclassified. ▪ Asked if reclassifying streets results in physical changes. ▪ Asked about the phasing of development with infrastructure improvements. ▪ Asked if downtown streets would become one-way streets. ▪ Stated that she has participated in prior General Plan update outreach events and it does not seem that the comments and concerns brought up during those events were incorporated into the land use map or influenced the direction of the plan.	▪ Section 5.16, *Transportation*
Cynthia Guerra	3/5/20	▪ Open Space ▪ Population Growth ▪ Focus Areas ▪ Zone Changes ▪ Air Quality	▪ Asked if the Willowick property was targeted for growth, and if so, what parcels. ▪ Concerned about the inclusion of the Willowick property into the Focus Area and asked if the Willowick property could be removed from the Focus Area. ▪ Asked if it would be easier to develop the Willowick property if it remains in the Focus Area.	▪ Section 5.2*, Air Quality* ▪ Section 5.10, *Land Use and Planning* ▪ Section 5.13, *Population and*

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Table 2-2 Scoping Meeting Comment Summary

Commenting Agency/Person	Date	Comment Type	Comment Summary	Issue Addressed In:
		▪ Environmental Justice	▪ Concerned about population growth and proposed zone change for Willowick parcels. ▪ Stated that the City should talk to the community and explain why certain areas are in Focus Areas. ▪ Stated that there is nothing left in Santa Ana for open space. ▪ Concerned that the increase in population would impact open space and air quality. Asked how the EIR will account for that. ▪ Asked what specific Willowick parcels are being considered for development. ▪ Stated environmental justice concerns and that some communities in Santa Ana are disproportionately affected.	*Housing* ▪ Section 5.15, *Recreation* ▪ The topic of environmental justice will be incorporated throughout the General Plan update, with goals and policies incorporated into multiple elements.
John Trapmans [Speaker name not confirmed.]	3/5/20	▪ Define terms	▪ Asked about how terms in the GPU are defined and how they contribute to density, including "urban neighborhood." ▪ Wanted more information about the GPU in order to provide commentary.	▪ Chapter 3, *Project Description*
Dale Helvig	3/5/20	▪ Land Use Density	▪ Asked if the City was going to buy more land in order to accommodate the anticipated growth. Stated that the General Plan update will increase density in the city. ▪ Asked if the General Plan update was available online.	▪ Section 5.10, *Land Use and Planning* ▪ Section 5.13, *Population and Housing*
Ginelle Hardy	3/5/20	▪ Cultural Resources	▪ Asked how the City was going to analyze historic resources. ▪ Asked if a historic resources report is available. ▪ Asked if South Main is being recategorized. ▪ Concerned about historic buildings that are being removed or demolished. ▪ Asked how EIR will address historic areas and individual resources. ▪ Stated that the Pacific Electric Park and bicycle trails were missing from the Land Use Map.	▪ Section 5.4, *Cultural Resources*
Tay Aston	3/5/20	▪ Define terms ▪ Parking	▪ Asked what District Center meant. ▪ Asked about parking analyses.	▪ Chapter 3, *Project Description* ▪ Parking is not a CEQA issue

Table 2-2 Scoping Meeting Comment Summary

Commenting Agency/Person	Date	Comment Type	Comment Summary	Issue Addressed In:
[Speaker name not recorded.]	3/5/20	▪ Environmental Justice ▪ Transportation	▪ Concerned about the passage of large diesel vehicles and paint trucks and their impact on residents. States that this should be one of the biggest focuses of the General Plan update.	▪ Section 5.2, *Air Quality*
Sam Romero	3/5/20	▪ Air Quality	▪ Added to the prior speaker's comment and said that the trucks create air quality concerns.	▪ Section 5.2*, Air Quality*
Chris Schmidt	3/5/20	▪ Transportation ▪ Public Services ▪ Zoning	▪ Concerned about the traffic study and circulation. Stated that a lot of the streets in the city are already operating at the lowest rating, so adding more vehicles to an already bad rating would not be adequately accounted for. ▪ Asked if fire and police services were going to be analyzed. ▪ Asked if the General Plan update would prevent or stop a person from redesignating a zone.	▪ Traffic and congestion are no longer a CEQA issue. ▪ Section 5.10, *Land Use and Planning* ▪ Section 5.14, *Public Services* ▪ Section 5.16, *Transportation*
[Speaker name not recorded.]	3/5/20	▪ Land Use and Planning ▪ Transportation ▪ Population and Housing	▪ Concerned about the City's ability to accommodate high density housing and vehicles. Stated that people will still need to drive. ▪ Stated that there is an imbalance between business growth and residential growth and there needs to be more of a balance. ▪ Asked how the General Plan update would increase business opportunities in the city.	▪ Traffic and congestion are no longer a CEQA issue ▪ Section 5.10, *Land Use and Planning* ▪ Section 5.13, *Population and Housing* ▪ Section 5.16, *Transportation*
Patricia Coleman	3/5/20	▪ Aesthetics ▪ Land Use and Planning ▪ Process	▪ Asked for more information on what is being proposed to change and what the city will look like in the future. ▪ Asked if there would be additional opportunities to address concerns in the future if the concerns were not brought up during the scoping meeting.	▪ Section 5.1, *Aesthetics* ▪ Section 5.10, *Land Use and Planning* ▪ The public will have an opportunity to comment on the Draft PEIR during the 45-day public comment period.
[Speaker name not recorded.]	3/5/20	▪ Environmental Consultant	▪ Concerned that the environmental consultants would be biased in the preparation of the environmental analyses. Said that a neutral organization needs to prepare the EIR and plans and analyze impacts. Asked for environmental consultant's promise to prepare an unbiased analysis.	▪ N/A

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Table 2-2 Scoping Meeting Comment Summary

Commenting Agency/Person	Date	Comment Type	Comment Summary	Issue Addressed In:
[Speaker name not recorded.]	3/5/20	▪ Communication	▪ Said that the City can do a better job communicating to the public about the General Plan update and in general.	▪ Once complete, the DEIR will be available for a 45-day public review period and will be posted on the City's website.
[Speaker name not recorded.]	3/5/20	▪ Population and Housing ▪ Land Use and Planning ▪ Recreation	▪ Said that the City of Santa Ana thinks that it needs more housing but residents do not agree with that. ▪ Concerned about increase in density. ▪ Asked that the EIR study the effects of electric vehicles going forward. ▪ Said that the city needs more jobs, more green space, and not more housing.	▪ Section 5.10, *Land Use and Planning* ▪ Section 5.13, *Population and Housing* ▪ Section 5.15, *Recreation*
[Speaker name not recorded.]	3/5/20	▪ Outreach/ Communication	▪ Said that surveys given at community meetings could be better.	▪ N/A
Comment Cards and E-mailed Comments (Individuals)				
Pedro Aranda (Zapateria Aranda)	3/5/20	▪ N/A	▪ Provides a sketch.	▪ N/A
Tay Aston	3/5/20	▪ Parking ▪ Open Space ▪ Define Terms	▪ States that increasing housing should also entail on-site parking for multiple drivers living in the units. The current requirement is insufficient and will have a negative effect on the use and safety of surrounding neighborhoods. ▪ Requests that open space be increased. States that adding multiunit residences without providing open space is a concrete jungle in the making. ▪ Requests that terms be defined, e.g., District Center; Low-, Mid-, etc. residential, environmental justice.	▪ Parking is not a CEQA issue ▪ Section 5.15, *Recreation* ▪ Chapter 3, *Project Description*
Diane Fradkin	3/5/20	▪ Transportation ▪ Noise ▪ Air Quality ▪ Greenhouse Gas Emissions ▪ Density ▪ Utilities and Service Systems	▪ States that regarding the Urban Neighborhood (UN) designation for the Medical Arts property, the property is a very constricted parcel, with the western boundary being railroad tracks. States that there is a proposal to do a grade separation for the railroad crossing at 17th and Lincoln that will greatly restrict access from the Medical Arts property onto 17th Street. States that the UN designation will add too much traffic, noise, air quality issues, and greenhouse gas to an already congested 17th Street and Grand. States this UN designation needs a parks/open space component. ▪ States that she attended a General Plan update meeting last summer and took a survey for the Medical Arts property, and majority of attendees of the meeting did not want to see more high density at this location. States that this will impact existing residents in a negative way. Way too dense for an already dense area. ▪ Concerned that existing infrastructure (streets, sewer, water, storm drain) cannot handle the proposed density, unless projects will add new roadways and water/sewer/storm drain.	▪ Section 5.2, *Air Quality* ▪ Section 5.7, *Greenhouse Gas Emissions* ▪ Section 5.10, *Land Use and Planning* ▪ Section 5.12, *Noise* ▪ Section 5.16, *Transportation* ▪ Section 5.18, *Utilities and Service Systems* ▪ Section 5.15, *Recreation*

Table 2-2 Scoping Meeting Comment Summary

Commenting Agency/Person	Date	Comment Type	Comment Summary	Issue Addressed In:
			▪ Requests clarification on the circulation plan regarding roadway classifications (and changes to roadway classifications), physical changes to roadways, and phasing of roadway improvements with construction.	
Soledad Valentin	3/5/20	▪ Maintenance ▪ Utilities and Service Systems	▪ States that at the corner of First and Standard there are cars that do not function and asks that the cars be moved to a more adequate location for them and for their owners. ▪ Asks that primary roads are kept clean and that businesses clean outside and keep it clean. ▪ Asks that when there is building construction that there be a focus on water, electricity, and gas pipelines and for them to be brand new.	▪ These topics are not related to the scope of the Draft PEIR.
Diane Fradkin	3/6/20	▪ Land Use and Planning; ▪ Density and overcrowding; ▪ Infrastructure; ▪ Roadway access; and ▪ Alternatives	▪ Concerned about the use of "Urban Neighborhood" in the Grand and 17th Street area. ▪ Stated that her experience door knocking across Santa Ana is that Santa Ana residents do not want more high density residential. Stated that residents are concerned overcrowding will cause more stress to an overstressed and older infrastructure and want "responsible development." ▪ Concerned about density and overcrowding. ▪ Requests several alternatives to for the Grand and 17th Street section in the EIR and gives two examples. An alternative that include more single-family residential, town homes, low-rise garden-style apartments, parks, retail, and office. Another alternative that includes a Costco with gas sales, office, and residential (single-family, townhomes, and low-rise garden-style multifamily with park component). ▪ Requests the General Plan update to account for medical office uses in the Grand and 17th section. ▪ Suggests that land use and design accounts for grade separation at 17th and Lincoln for the railroad tracks. States that this will likely inhibit access along 17th Street and focus more access along Grand Avenue.	▪ Section 5.10, *Land Use and Planning* ▪ Section 5.13, *Population and Housing* ▪ Section 5.14, *Public Services* ▪ Section 5.15, Recreation ▪ Section 5.16, *Transportation* ▪ Section 5.18, *Utilities and Service Systems* ▪ Chapter 7, *Alternatives*
John Fradkin	3/6/20	▪ Housing Density ▪ Land Use and Planning ▪ Define terms	▪ Concerned about adding more housing to a built-out city. States that current residents want businesses, local jobs, parks, and open space. ▪ States that EIR should take into account that automotive industry is shifting to electric vehicles, which reduces greenhouse gases, and states that this makes transit-oriented development less relevant. ▪ Requests that zoning terms be defined early on. ▪ States that the "Urban Neighborhood" mixed-use zoned areas should provide for horizontal mixed-use building, not vertical buildings.	▪ Section 5.10, *Land Use and Planning* ▪ Section 5.13, *Population and Housing* ▪ Chapter 3, *Project Description*
Lisa Ganz	3/6/20	▪ Link to General Plan Information	▪ Requests a link to the General Plan update information.	▪ N/A
Jessie Lopez	3/6/20	▪ Future Meetings	▪ Asked if there will be another meeting.	▪ N/A

As noted in Table 2-2, several scoping comments were voiced and/or received about traffic impacts to Santa Ana's circulation network, especially related to the proposed increase in high density residential units; land use issues, increased densities, and overcrowding, specifically in association with the 55 Freeway/Dyer Road focus area; air quality impacts for city residents with an emphasis on how it relates to environmental justice; and adequacy of public services and utilities, mainly water and wastewater facilities, roadways, and parks and open space.

The City acknowledges the comments and concerns of adjacent cities related to the level of growth projected in the City of Santa Ana. The City will work closely with cities adjacent o General Plan Focus Areas when preparing the City of Santa Ana's Parks and Recreation Master Plan to ensure that the Dyer/55 Focus Area and other growth areas of the City provide additional recreation, parks, and core services essential in making complete communities. In addition, Santa Ana shall identify additional funding sources from new development projects to procure land or in-lieu fees for installation of parks in the immediate vicinity of proposed development in order to minimize the potential for impacts onto adjacent communities with regards to parks and open space utilization. The inclusion of publicly accessible open space is also part of the City of Santa Ana's development standards for residential/ mixed use development projects to address open space and recreation needs.

2.4 SCOPE OF THIS DRAFT PEIR

The scope of the PEIR was determined based on the City's NOP, the scoping meeting, and comments received in response to the NOP and at the scoping meeting. Pursuant to Sections 15126.2 and 15126.4 of the CEQA Guidelines, this PEIR should identify any potentially significant adverse impacts and recommend mitigation that would reduce or eliminate these impacts to levels of insignificance.

The information in Chapter 3, *Project Description*, establishes the basis for analyzing future, project-related environmental impacts. However, further environmental review by the City may be required as more detailed information and plans are submitted on a project-by-project basis.

2.4.1 Impacts Found Not to Be Significant

As detailed in Chapter 8, *Impacts Found Not to Be Significant*, the City of Santa Ana determined that the following environmental impact categories were not significantly affected by or did not affect the GPU.

- Agriculture and Forestry Resources
- Wildfire

2.4.2 Potentially Significant Adverse Impacts

Eighteen environmental factors have been identified as potentially significant impacts if the GPU is implemented. These factors are:

- Aesthetics
- Air Quality
- Biological Resources

- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems

2.4.3 Unavoidable Significant Adverse Impacts

This Draft PEIR identifies five environmental topics with significant and unavoidable adverse impacts, as defined by CEQA, that would result from implementation of the GPU. Unavoidable adverse impacts may be considered significant on a project-specific basis, cumulatively significant, and/or potentially significant. If the City of Santa Ana, as the lead agency, determines that unavoidable significant adverse impacts will result from the GPU, the City of Santa Ana must prepare a "Statement of Overriding Considerations" before it can approve the project. A Statement of Overriding Considerations states that the decision-making body has balanced the benefits of the GPU against its unavoidable significant environmental effects and has determined that the benefits of the project outweigh the adverse effects and, therefore, the adverse effects are considered acceptable. The impacts that were found in the Draft PEIR to be significant and unavoidable are:

Air Quality

- **Impact 5.2-1** The General Plan update would be inconsistent with the South Coast Air Quality Management Plan (AQMP) because buildout under the plan would exceed the population estimates assumed for the AQMP and would cumulatively contribute to the nonattainment designations of the South Coast Air Basin (SoCAB).

- **Impact 5.2-2** Construction activities associated with buildout of the General Plan update would generate short-term emissions that exceed the South Coast Air Quality Management District (AQMD's) significance thresholds and cumulatively contribute to the nonattainment designations of the SoCAB.

- **Impact 5.2-3** Buildout in accordance with the General Plan update would generate long-term emissions that would exceed South Coast AQMD's regional significance thresholds and cumulatively contribute to the nonattainment designations of the SoCAB.
- **Impact 5.2-4** Buildout of the General Plan update could expose sensitive receptors to substantial concentrations of toxic air contaminants.
- **Impact 5.2-5** Construction and operation emissions generated by individual development projects have the potential to exceed South Coast AQMD's Local Significance Thresholds.

Cultural Resources

- **Impact 5.4-1** The proposed General Plan update would allow development in areas that have historic resources identified by previous cultural resource surveys. Development in these areas would, therefore, potentially cause the disturbance of historic resources in the plan area.

Greenhouse Gas Emissions

- **Impact 5.7-1** Implementation of the proposed General Plan update would result in a decrease in GHG emissions in horizon year 2045 from existing baseline but may not meet the long-term GHG reduction goal under Executive Order S-03-05.

Noise

- **Impact 5.12-1** Due to the potential for proximity of construction activities to sensitive uses, the number of construction projects occurring simultaneously, and the potential longevity of construction activities, construction noise could result in a temporary substantial increase in noise levels above ambient conditions.
- **Impact 5.12-2** Buildout of the individual land uses and projects for implementation of the General Plan update would expose existing residences to project-generated traffic noise.

Population and Housing

- **Impact 5.13-1** At buildout, the General Plan update would result in an increase in population and housing units that exceeds the Orange County COG projections by approximately 20 and 38 percent, respectively. There are no feasible mitigation measure and impacts would be significant and unavoidable.

These impacts are individually analyzed in Section 5.2, *Air Quality*; Section 5.4, *Cultural Resources*; Section 5.7, *Greenhouse Gas Emissions,* Section 5.12, *Noise*; and Section 5.13, *Population and Housing*, and summarized in Chapter 6 of this Draft PEIR.

2.5 INCORPORATION BY REFERENCE

All documents cited or referenced are incorporated into the Draft PEIR in accordance with CEQA Guidelines Sections 15148 and 15150, including but not limited to:

- City of Santa Ana General Plan (existing 16 elements)
- City of Santa Ana Municipal Code

In each instance where a document is incorporated by reference for purposes of this report, the Draft PEIR shall briefly summarize the incorporated document or briefly summarize the incorporated data if the document cannot be summarized. In addition, the Draft PEIR shall explain the relationship between the incorporated part of the referenced document and the Draft PEIR.

This Draft PEIR also relies upon previously adopted regional and statewide plans and programs, agency standards, and background studies in its analyses, such as the South Coast Air Quality Management District's air quality management plans and *CEQA Air Quality Handbook*. Chapter 12, *Bibliography*, provides a complete list of references used in preparing this Draft PEIR. All of the documents that are incorporated by reference are available for review at:

City of Santa Ana Planning Division
20 Civic Center Plaza
Santa Ana, CA 92701

2.6 FINAL PEIR CERTIFICATION

This Draft PEIR is being circulated for public review for a period of 45 days. Interested agencies and members of the public are invited to provide written comments on the Draft PEIR to the City of Santa Ana at the address shown below and on the title page of this document. Upon completion of the 45-day review period, the City will review all written comments received and prepare a written response for each comment. A Final PEIR will incorporate all of the comments received, responses to the comments, and any changes to the Draft PEIR that result from the comments received. The Final PEIR will be presented to the City for potential certification as the environmental document for the GPU. All persons who commented on the Draft PEIR will be notified of the availability of the Final PEIR and the date of the Santa Ana Planning Commission and City Council public hearings concerning potential certification of the Final PEIR.

The Draft PEIR is available to the general public for review at these locations:

City of Santa Ana Planning Division
20 Civic Center Plaza
Santa Ana, CA 92701

Santa Ana Public Library
26 Civic Center Plaza,
Santa Ana, CA 92701

The Draft PEIR is also available on the City's website at https://www.santa-ana.org/general-plan.

All comments received from agencies and individuals on the Draft PEIR will be accepted during the 45-day public review period. All comments on the Draft PEIR should be sent to:

Verny Carvajal, Principal Planner
City of Santa Ana Planning and Building Agency
PO Box 1988 (M-20)
Santa Ana, CA 92702
VCarvajal@santa-ana.org

All public agencies that submit comments during the 45-day public review period on the Draft PEIR will receive written responses to their comments at least 10 days prior to final action on the GPU. If the City Council decides to certify the Final PEIR, it will make the necessary findings required by CEQA and the CEQA Guidelines regarding the extent and nature of the impacts as presented in the Final PEIR. The Final PEIR must be certified by the City before it can approve the GPU. Public input is encouraged at all public hearings and meetings before the City Council and Planning Commission concerning the GPU.

2.7 MITIGATION MONITORING

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

The Mitigation Monitoring and Reporting Program for the General Plan update will be completed in conjunction with the Final PEIR and prior to consideration of the GPU by the Santa Ana City Council.

3. Project Description

3.1 PROJECT LOCATION

The City of Santa Ana is in the western central portion of Orange County, approximately 30 miles southwest of the city of Los Angeles and 10 miles northeast of the city of Newport Beach (see Figure 3-1, *Regional Location*). As shown in Figure 3-2, *Citywide Aerial*, the city is bordered by the city of Orange and unincorporated areas of Orange County to the north, the city of Tustin to the east, the cities of Irvine and Costa Mesa to the south, and the cities of Fountain Valley and Garden Grove to the west. In November 2019, the City annexed the 17th Street Island, a 24.78-acre area in the northeast portion of the city. The 17th Street Island is bounded by State Route 55 to the east, 17th Street to the south, and North Tustin Avenue to the west (see Figure 3-3, *17th Street Island and Sphere of Influence*). The city also includes a portion of the Santa Ana River Drainage Channel within its sphere of influence (SOI). The city and its SOI are defined and referred to herein as the plan area.

3.2 STATEMENT OF OBJECTIVES

The updated General Plan is based on a vision statement and core values established as part of an extensive, multiyear community outreach effort. The City has identified the following core values to guide the General Plan Update (GPU):

- **Health.** The people of Santa Ana value a physical environment that encourages healthy lifestyles, a planning process that ensures that health impacts are considered, and a community that actively pursues policies and practices that improve the health of our residents.

- **Equity.** Residents value taking all necessary steps to ensure equitable outcomes, expanding access to the tools and resources that residents need, and balancing competing interests in an open and democratic manner.

- **Sustainability.** Santa Ana values land use decisions that benefit future generations, plans for the impacts of climate change, and incorporates sustainable design practices at all levels of the planning process.

- **Culture.** The Santa Ana's community values efforts that celebrate our differences as a source of strength, preserve and build upon existing cultural resources, and nurture a citywide culture of empowered residents.

- **Education.** Santa Ana values the creation of lifelong learners, the importance of opening up educational opportunities to all residents, and investing in educational programs that advance residents' economic well-being.

These core values were used as the basis to define more specific project objectives to aid decision makers in their review of the GPU and associated environmental impacts. The objectives include:

1. Promote infill development while respecting and protecting established neighborhoods
2. Optimize high density residential and mixed-use development that maximizes potential use of mass transit
3. Provide locations for new housing development that maximizes affordable housing opportunities to achieve both City and regional housing goals
4. Facilitate new development at intensities sufficient to generate community benefits and attract economic activity
5. Provide housing and employment opportunities at an urban level of intensity at the City's edge
6. Introduce mixed-use urban villages and encourage experiential commercial uses that are more walkable, bike-friendly, and transit-oriented
7. Develop opportunities for live/work, artist spaces, and small-scale manufacturing

3.3 PROJECT CHARACTERISTICS

"Project," as defined by the CEQA Guidelines, means:

> ... the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and that is any of the following: (1)…enactment and amendment of zoning ordinances, and the adoption and amendment of local General Plans or elements thereof pursuant to Government Code Sections 65100–65700. (14 Cal. Code of Reg. § 15378[a])

3.3.1 Current General Plan

The current General Plan for Santa Ana consists of 16 elements adopted in different years from 1982 to 2014. The current General Plan elements and their respective goals, policies, and actions are:

- **Airport Environs Element:** A long-range policy guide to safeguard the general welfare of the inhabitants of Santa Ana in the vicinity of John Wayne Airport (JWA). Additionally, it provides guidance for the purpose of ensuring navigable airspace is not impacted by future development in the city. This element was adopted February 11, 2009.
- **Circulation Element:** The City's primary guide for transportation planning. This element, adopted February 2, 1998, is concerned with accommodating the transportation needs of those living, working, and visiting in the city. Its objective is to articulate the City's vision and plans for the ongoing development and maintenance of a comprehensive transportation network.
- **Conservation Element:** The conservation element is concerned with the protection, use, and development of natural and cultural resources. It emphasizes scarce resources and those needing special attention or management, and aims to prevent their exploitation, neglect, or destruction. This element was adopted September 20, 1982.

Figure 3-1 - Regional Location

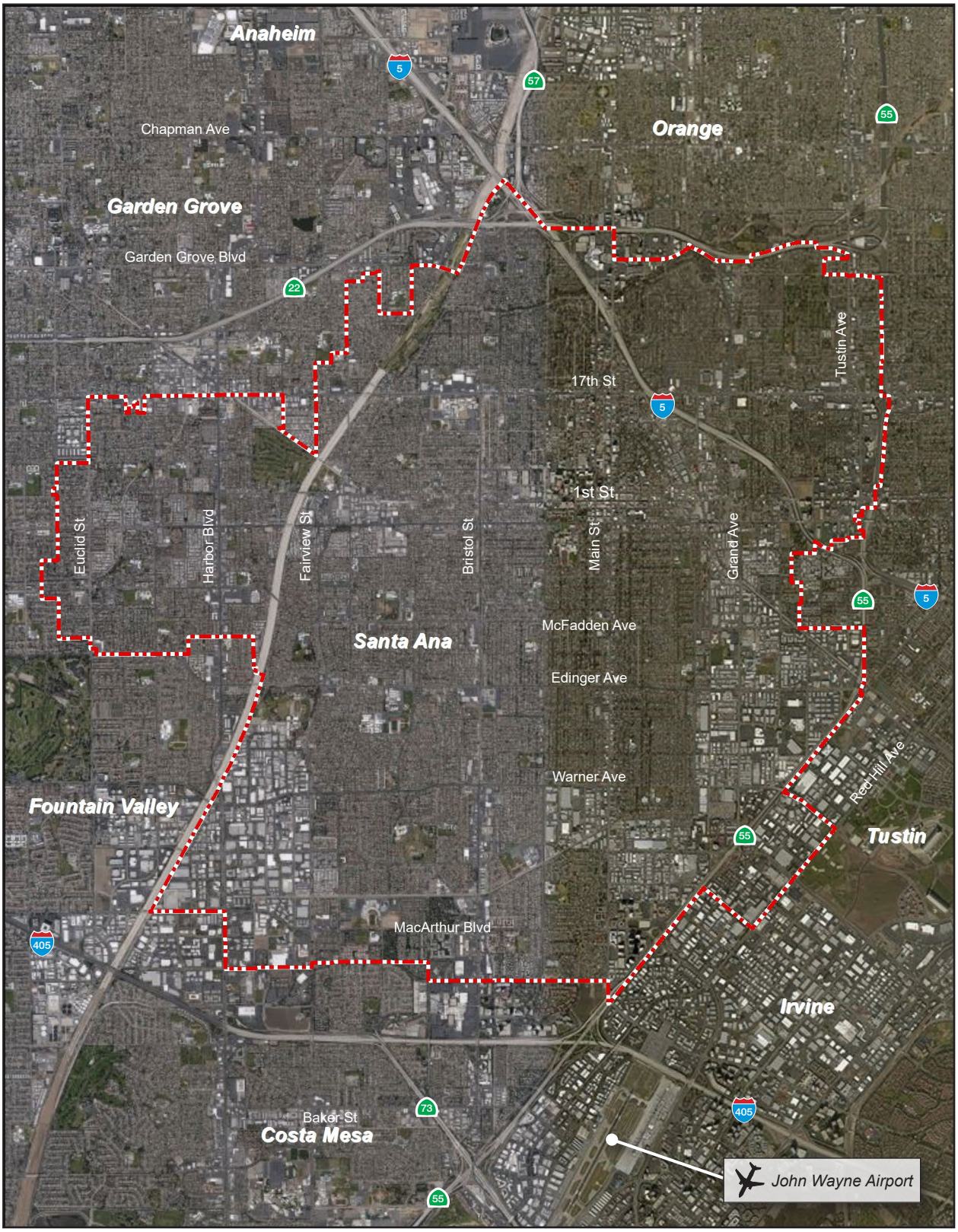


Source: ESRI, 2020

3. Project Description

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Figure 3-2 - Citywide Aerial

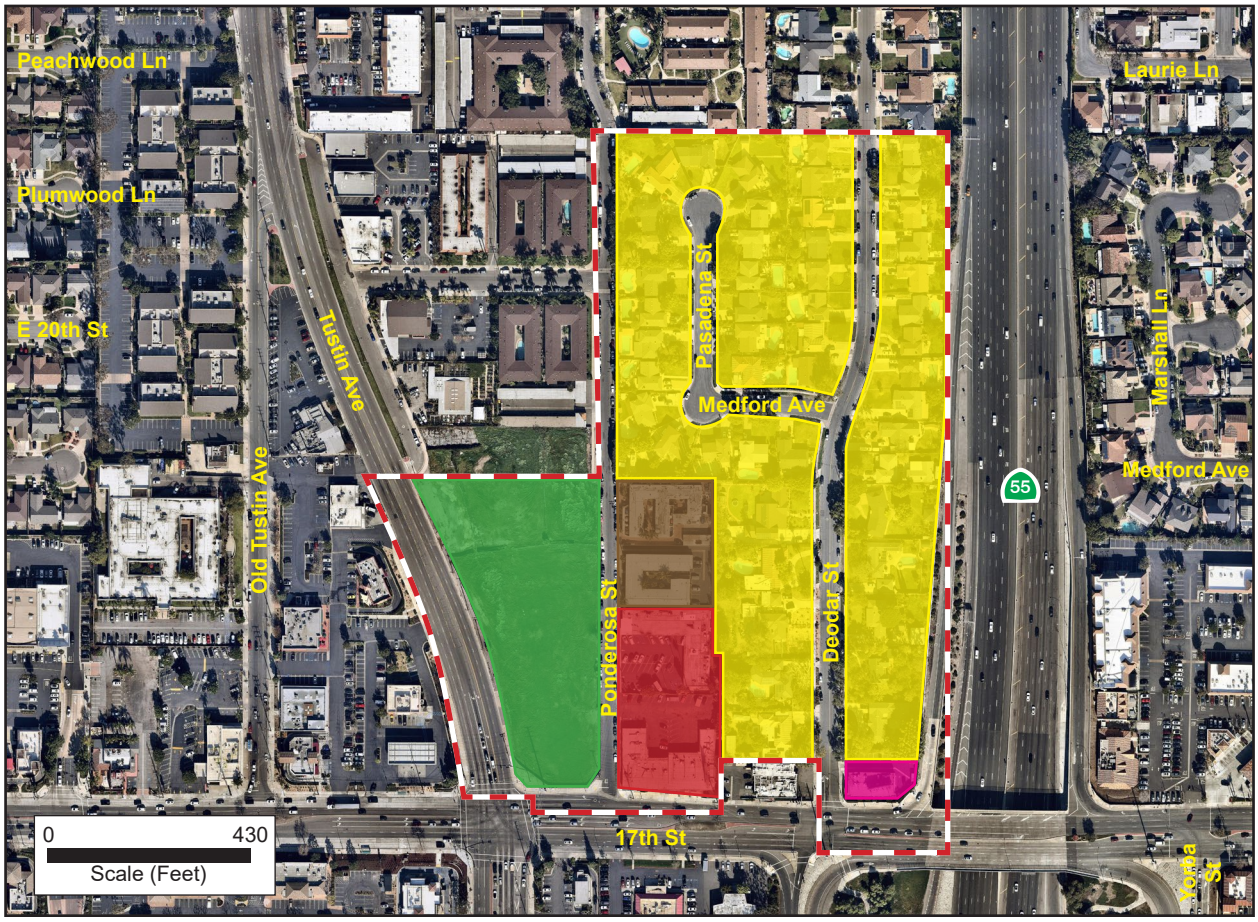


Source: ESRI, 2020

3. Project Description

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Figure 3-3 - 17th Street Island and Sphere of Influence
17th Street Island Annexed to City November 2019



Existing Land Use (2019)

- Single-Family
- Multi-Family
- General Commerical
- Office
- Vacant



Source: OC LAFCO, 2016

3. Project Description

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- **Economic Development Element:** This element, adopted July 6, 1998, has five objectives to encourage and promote economic vitality citywide:
  - Implement a comprehensive economic development strategy to ensure that Santa Ana is a city with a vibrant business climate that is accessible, user friendly, and welcoming to all residents and visitors.
  - Create new opportunities for business/job growth and encourage private development through new General Plan and zoning ordinance policies.
  - Promote a solutions-based customer focus in all efforts to facilitate development and investment in the community.
  - Continue to pursue objectives that shape downtown Santa Ana into a thriving, culturally diverse, shopping, dining, and entertainment destination.
  - Leverage private investment that results in tax base expansion and job creation citywide.
- **Education Element:** This element addresses the physical planning issues related to the provision of education services, such as the location of facilities and the projection of student enrollment as it relates to the need for additional schools. This element was adopted January 19, 1988.
- **Energy Element:** The purpose of the energy element is to provide policies and programs for reducing energy consumption and increasing use of new energy sources. The Energy Element was adopted September 20, 1982.
- **Growth Management Element:** This element, adopted on July 1, 1991, mandates that growth and development in Santa Ana be based upon the City's ability to provide an adequate circulation system pursuant to the Revised Traffic Improvement and Growth Management Ordinance.
- **Housing Element:** California law requires that cities develop housing programs to meet their fair share of housing needs in the region (Government Code §§ 65580 et seq.). A key part of this goal is addressing the regional housing needs assessment and State law requirements to plan, facilitate, and encourage housing production commensurate with their assigned need. The City of Santa Ana has been assigned a planning goal of accommodating 3,087 housing units for the housing element planning period of 2021 to 2029 in Southern California Association of Government's 6th Cycle Regional Housing Needs Assessment. To comply with State law, Santa Ana prepares a housing element every five years with goals, policies, and programs to facilitate the development, improvement, and preservation of housing. The latest Housing Element was adopted in February 2014.
- **Land Use Element:** A long-range guide for land use and development in the city. It indicates the type, location, and intensity of the development and land uses permitted. The primary objective of this element is to assist in the management of future growth, to improve the city's overall physical appearance, to minimize potential land use conflicts, and to facilitate growth and development reflecting the community's vision. The Land Use Element was adopted February 2, 1998.

- **Noise Element:** The focus of the noise element is on remedial measures to deal with existing noise problems; prevention of new noise problems through proper arrangement of noise-sensitive land uses in relationship to circulation systems; and establishment of appropriate noise emission or insulation standards for various land uses. This element was adopted September 20, 1982.

- **Open Space, Parks, and Recreation Element:** This element, adopted September 20, 1982, identifies the City's priorities for retention and treatment of this important resource of open space land.

- **Public Facilities Element:** The basic needs of society for health, education, welfare, and safety are met by a city's public facilities, utilities, and services. The types of facilities and services, and the physical and structural relationships between them, express the city's institutionalized response to the desires and needs of the citizenry. Therefore, facility, utility, and service policies in this element are points of departure for an ongoing process of facility provision and service delivery. The public facilities plan addresses education, library, medical, cultural, government, and public utilities. This element was adopted September 20, 1982.

- **Public Safety Element:** Aims to lessen risks associated with activities over which the City has some jurisdiction by eliminating avoidable risks or reducing risks to acceptable levels. These goals can be implemented through assessment of acceptable levels of risk for fire, flood, civil disorder, incidence of crime, and other natural and man-induced potential safety hazards in the city; identification of ways risk can be reduced or avoided; and establishment of policies that result in acceptable levels of risk. This element was adopted September 20, 1982.

- **Scenic Corridors Element:** Scenic corridors are linear features of the city through which people and vehicles move. They include streets, highways, and waterways, with their associated pedestrian ways and bike trails. This element, adopted September 20, 1982, identifies Santa Ana's scenic corridors and designates them for special treatment and improvements.

- **Seismic Safety Element:** Primarily a vehicle for identifying seismic hazards that must be considered in planning the location, type, and density of development throughout Santa Ana. The element, adopted September 20, 1982, identifies, and appraises seismic hazards, including susceptibility to surface ruptures, ground shaking, and ground failures. The goal is to reduce deaths, injuries, damage to property, and economic and social dislocation resulting from earthquakes and other geologic hazards.

- **Urban Design Element:** Establishes a long-range vision regarding the city's urban form, and in coordination with other elements, orchestrates a safe, functional, and aesthetically pleasing urban environment and curtails obsolete, dysfunctional, and chaotic development. This element, adopted July 6, 1998, specifically addresses outdoor space and building form and establishes programs and measures to improve the physical setting in which community life takes place.

3.3.1.1 EXISTING LAND USE

As shown in Figure 3-4, *Existing Land Use*, the plan area comprises several existing land uses, with residential, commercial, and industrial making up the majority of land uses. Table 3-1, *Existing Land Use Statistical Summary*, provides a statistical summary of the existing land uses within the Focus Areas and the remaining land uses citywide. The City owns and/or operates 44 parks with a total acreage of approximately 353 acres. Additionally, the Santa Ana River and Santiago Creek are part of a regional system of open space corridors promoted by Orange County. This corridor represents 116 acres of open space in the city.

The City identified five focus areas suited for new growth and development under the GPU: Grand Avenue/17th Street, 55 Freeway/Dyer Road, South Bristol Street, South Main Street, and West Santa Ana Boulevard, . These five areas are along major travel corridors, the future OC Streetcar line, and/or linked to the city's downtown area. The Focus Areas are described in Section 3.3.2.3.

Table 3-1 Existing Land Use Statistical Summary

Land Use Designation	Acres	% of Total
Grand Avenue/17th Street	**171.5**	**100%**
Auto Repair/Service	4.0	2.3
General Commercial	63.5	37.0
General Industrial	4.0	2.3
General Office	41.2	24.0
Government/Public Facility	9.3	5.4
Hotel/Motel	0.8	0.5
Mixed Use	0.2	0.1
Multi-Family Residential	22.4	13.1
Religious Institution	12.8	7.5
Single Family Residential	6.5	3.8
Special Use Facility	0.2	0.1
Transportation/ROW	1.1	0.6
Vacant	3.5	2.1
Wholesaling and Warehousing	1.8	1.1
55 Freeway/Dyer Road	**354.5**	**100%**
Auto Repair/Service	0.7	0.2
Mixed Use	18.7	5.3
General Commercial	58.2	16.4
General Industrial	80.1	22.6
General Office	50.3	14.2
Hotel/Motel	35.4	10.0
Light Industrial	103.1	29.1
Transportation/ROW	5.2	1.5
Vacant	2.8	0.8
South Bristol Street	**199.9**	**100%**
Auto Repair/Service	4.4	2.2
General Commercial	161.3	80.7
General Office	10.4	5.2
Government/Public Facility	0.2	0.1
Hotel/Motel	2.6	1.3
Improved Flood Waterway	3.9	1.9
Multi-Family Residential	16.7	8.3
Vacant	0.5	0.2
South Main Street	**312.2**	**100%**
Auto Repair/Service	9.5	3.0

3. Project Description

Table 3-1 Existing Land Use Statistical Summary

Land Use Designation	Acres	% of Total
General Commercial	93.8	30.0
General Industrial	12.2	3.9
General Office	9.8	3.1
Government/Public Facility	2.4	0.8
Hotel/Motel	1.0	0.3
Light Industrial	2.1	0.7
Mixed Use	3.5	1.1
Multi-Family Residential	47.1	15.1
Parking Facility	0.7	0.2
Religious Institution	5.4	1.7
School (add College)	13.6	4.4
Single Family Residential	108.6	34.8
Special Use Facility	0.3	0.1
Transportation/ROW	0.2	0.1
Utility	0.3	0.1
West Santa Ana Boulevard	**481.6**	**100%**
Auto Repair/Service	5.2	1.1
General Commercial	60.8	12.6
General Industrial	25.2	5.2
General Office	8.9	1.8
Golf Course	101.3	21.0
Government/Public Facility	18.1	3.8
Light Industrial	29.7	6.2
Live/Work	0.4	0.1
Mixed Use	0.6	0.1
Mobile Homes and Trailer Parks	16.5	3.4
Multi-Family Residential	73.2	15.2
Open Storage	4.5	0.9
Parks and Recreation	7.3	1.5
Religious Institution	5.1	1.1
School (add College)	26.7	5.5
Single Family Residential	68.0	14.1
Special Use Facility	2.4	0.5
Transportation/ROW	16.4	3.4
Vacant	2.5	0.5
Wholesaling and Warehousing	2.1	0.4
Not Specified	6.7	1.4
Balance of City	**11,598.8**	**100%**
Auto Repair/Service	38.3	0.3
Cemetery	102.2	0.9
General Commercial	577.8	5.0
General Industrial	933.3	8.0
General Office	364.1	3.1
Golf Course	115.7	1.0
Government/Public Facility	167.8	1.4
Heavy Industrial	99.5	0.9
Hospital	9.6	0.1
Hotel/Motel	12.9	0.1
Improved Flood Waterways	16.1	0.1
Light Industrial	420.0	3.6
Live/Work	3.2	0.0

Table 3-1 Existing Land Use Statistical Summary

Land Use Designation	Acres	% of Total
Mixed Use	26.0	0.2
Mobile Homes and Trailer Parks	340.0	2.9
Multi-Family Residential	1,434.2	12.4
Museum	2.0	0.0
Open Storage	0.9	0.0
Other	0.0	0.0
Parking Facility	6.9	0.1
Parks and Recreation	338.4	2.9
Personal Storage	2.3	0.0
Religious Institution	209.7	1.8
School	779.1	6.7
Single Family Residential	4,873.7	42.0
Special Use Facility	15.2	0.1
Transportation/ROW	62.6	0.5
Vacant	213.0	1.8
Wholesaling and Warehousing	171.9	1.5
Not Specified	262.3	2.3
TOTAL	**13,118.5**	**—**

Source: Numbers aggregated and projected by PlaceWorks, 2020.

City Boundary

The majority of the city is urbanized, with residential and nonresidential development, mobility, and public facilities all contributing to Santa Ana's existing built environment. The city's incorporated boundaries encompass approximately 27.4 square miles). Residential land uses occupy approximately 50 percent of the land within the current city boundaries, accounting for 6,667 acres.[1] Other predominant land uses that make up the City include commercial (1,798 acres)[2] and industrial (1,904 acres).[3] Figures 3-5a and 305b, *City Photos,* includes a photo collage of the City and includes photographs of different prominent features around the Plan Area.

Sphere of Influence

The City annexed the 17th Street Island in November 2019 (see Figure 3-3). This area includes approximately 53 single-family detached units and 20 other dwelling units, for a total of 275 residents (OC LAFCO 2018). The island is north of East 17th Street and adjacent to the SR-55, the Costa Mesa Freeway.

The city still includes a two-mile portion of the Santa Ana River Drainage Channel in its SOI along the city's westerly border with Fountain Valley (see Figure 3-3).

1 This number does not include Live/Work and Mixed-Use land uses.
2 This land use includes Auto Repair/Storage, General Commercial, General Office, Hotel/Motel, Live/Work Mixed Use, Parking Facility, Open Storage, and Personal Storage.
3 Includes Industrial and Wholesaling and Warehousing.

3.3.1.2 CURRENT GENERAL PLAN LAND USE DESIGNATIONS

Figure 3-6, *Current General Plan Land Use Plan*, shows the 11 land use designations of the current General Plan and Table 3-2 gives a general description of each designation along with allowable uses.

Table 3-2 Land Use Designation Descriptions

Land Use Designation	General Character	Allowable Land Use
Low Density Residential	Designation applies to areas which are developed with lower density residential land uses. The allowable maximum development intensity is 7 units per acre.	Single family homes
Low-Medium Density Residential	Designation applies to areas developed with residential uses at permitted densities of up to 11 units per acre.	Mobile home parks, a mixture of duplexes and single-family residences, or small lot subdivisions.
Medium Density Residential	Designation applies to areas developed with residential uses at densities of up to 15 units per acre.	Multi-family development projects.
Professional and Administrative Office (PAO)	Designation applies to areas where professional and/or administrative offices are predominant, or where such development is being encouraged in this land use designation. The floor area ratio (FAR) intensity standard applicable to this land use designation ranges from 0.5 to 1.0.	The types of uses typically located in the PAO district include the following: • Professional and administrative offices/office parks; • Service activities such as copy centers, courier services, travel agencies, and restaurants when such uses are an integral component of a planned office development; • Professional uses such as accountants, attorneys, doctors, engineers, and insurance brokers.
General Commercial	Applies to commercial corridors in Santa Ana including those located along Main Street, Seventeenth Street, Harbor Boulevard, and other major arterial roadways in the City. The intensity standard applicable to this designation is a floor area ratio of 0.5 1.0.	Uses typically located in this district are: • Business and professional offices; • Retail and service establishments; • Recreational, cultural, and entertainment uses; • Vocational schools.
District Center	Includes the major activity areas in the City. The intensity standard for the District Center ranges from 1.0 to 3.0.	District Centers in Santa Ana include the following: • The MainPlace/City Place District Center which allows for regional shopping, office complexes, and high intensity housing and mixed-use development • The Museum District which allows for office/cultural uses. • The Downtown District which serves as one of the Country's major employment and governmental operations centers complemented with a mix of residential, commercial, and services uses. • The South Coast Metro District which serves as a regional retail shopping

Table 3-2 Land Use Designation Descriptions

Land Use Designation	General Character	Allowable Land Use
		area which includes a range of commercial services and office projects. • The MacArthur Place District Center which contains an office/hotel complex and mixed-use project • The Metro East District which includes a balance of office, residential, and service uses. • The Transit Village District which allows for employment centers, residential and service uses. • The Harbor Mixed Use Transit Corridor Specific Plan includes higher intensity housing and mixed-use development.
One Broadway Plaza District Center	Has an FAR of 2.9, which exceeds the typical District Center intensity limit.	Allows for professional office complexes and mixed-use development.
Urban Neighborhood	This land use designation applies to primarily residential areas with pedestrian oriented commercial uses, schools and small parks. An FAR of 0.5 to 3.0 F is allowed.	Allows for a mix of residential uses and housing types, such as mid to low rise multiple family, townhouses and single-family dwellings; with some opportunities for live work, neighborhood serving retail and service, public spaces and use, and other amenities.
Institutional	Only public properties of approximately five acres or more are designated as Institutional. The maximum applicable floor area ratio standard for this designation is 0.5.	The Institutional designation includes the Civic Center, other governmental facilities, City facilities and public institutions such as schools, etc.
Industrial	The Industrial designation applies to those areas developed with manufacturing and industrial uses. in the City is designated as Industrial. The maximum floor area ratio for this designation is 0.45.	Typical uses found in this district include the following: • Light and heavy product manufacturing and assembly • Commercial uses which are ancillary to industrial uses in the district.
Open Space	Typical FAR is 0.2.	The Open Space designation is applied to parks, water channels, cemeteries and other open space uses.

Source: City of Santa Ana, 1998, Land Use Element.
Notes: FAR is defined as the relationship between the total amount of usable floor area that a building has, or has been permitted to have, and the total area of the lot on which the building stands.

Table 3-3, *Current General Plan Land Use Designations and Statistics*, presents a breakdown of current General Plan land use designations and statistics in the plan area.

3. Project Description

Table 3-3 Current General Plan Land Use Designations and Statistics

Land Use Designation	Acres	% of Total
Grand Avenue/17th Street	**171.5**	**100%**
General Commercial	113.3	66.1
Institutional	7.7	4.5
Low Density Residential	34.5	20.1
Open Space	1.1	0.6
Professional and Administrative Office	14.8	8.6
55 Freeway/Dyer Road	**354.5**	**100%**
District Center	1.8	0.5
General Commercial	66.9	18.9
Industrial	9.2	2.6
Open Space	3.5	1.0
Professional and Administrative Office	273.2	77.1
South Bristol Street	**199.9**	**100%**
District Center	90.9	45.5
General Commercial	92.6	46.3
Medium Density Residential	13.0	6.5
Open Space	3.4	1.7
South Main Street	**312.2**	**100%**
District Center	1.7	0.5
General Commercial	124.8	40.0
Industrial	7.1	2.3
Institutional	9.6	3.1
Low Density Residential	169.1	54.2
West Santa Ana Boulevard	**481.6**	**100%**
General Commercial	26.7	5.5
Industrial	85.4	17.7
Institutional	46.2	9.6
Low Density Residential	146.9	30.5
Medium Density Residential	27.0	5.6
Open Space	133.6	27.7
Professional and Administrative Office	13.5	2.8
Urban Neighborhood	2.4	0.5
Balance of City	**11,598.8**	**100%**
District Center	124.2	1.1
General Commercial	424.2	3.7
Industrial	2,159.6	18.6
Institutional	886.7	7.6
Low Density Residential	6,173.3	53.2
Low-Medium Density Residential	429.0	3.7
Medium Density Residential	335.3	2.9
One Broadway Plaza District Center	4.1	0.1

Table 3-3 Current General Plan Land Use Designations and Statistics

Land Use Designation	Acres	% of Total
Open Space	793.8	6.8
Professional and Administrative Office	260.4	2.2
Urban Neighborhood	4.1	0.1
Not Specified	4.1	0.1
TOTAL	**13,118.5**	**—**

Source: Figures aggregated and projected by PlaceWorks, 2020.

3.3.2 Description of the Project

In March 2014, the City Council adopted the Santa Ana Strategic Plan. The Strategic Plan was the result of an extensive community outreach process and established specific goals, objectives, and strategies to guide the City's major efforts. One of the key strategies identified was to complete a comprehensive update of the existing General Plan. The GPU will provide long-term policy direction to guide the physical development, quality of life, economic health, and sustainability of the Santa Ana community through 2045. The General Plan update will identify areas of opportunity and provide options to enhance development potential in key areas of the city. It will also bring the city into compliance with recent State laws, reflect current conditions, and incorporate input from the general public, City staff, and other stakeholders.

The proposed GPU is organized into three sections: I, Services and Infrastructure; II, Natural Environment; and III, Built Environment. The proposed GPU addresses the eight topics required by state law as well as five optional topics. State law gives jurisdictions the discretion to incorporate optional topics and to address any of these topics in a single element or across multiple elements of the general plan. The 12 proposed elements of the GPU will replace the 16 elements of the current General Plan. The General Plan update will incorporate the current 2014–2021 housing element, and no substantive changes are anticipated. The topic of housing will be addressed as a separate effort in late 2021 in accordance with State law. The topic of environmental justice will be incorporated throughout the General Plan update, with goals and policies incorporated into multiple elements. Volume II, Appendix B-a includes all the proposed goals and policies for each of the elements in the General Plan update. The 12 elements of the proposed General Plan update are:

Mandatory Topics

- Land Use Element
- Circulation Element
- Housing Element
- Open Space Element
- Conservation Element
- Safety Element
- Noise Element

Optional Topics

- Public Services Element
- Urban Design Element
- Community Element
- Economic Prosperity Element
- Historic Preservation Element

3. Project Description

The proposed General Plan update is comprehensive both in its geography and subject matter. It addresses the entire territory within the plan area's boundary and the full spectrum of issues associated with management of the plan area. The General Plan update also includes forecasts of long-term conditions and outlines development goals and policies; exhibits and diagrams; and the objectives, principles, standards, and plan proposals throughout its various elements. The GPU can be found online at https://www.santa-ana.org/general-plan. The General Plan Policy Framework can be accessed at https://www.santa-ana.org/sites/default/files/pb/generalplan/documents/GeneralPlanPolicyFrameworkMaster.DRAFT.cmo2.pdf.

Coordination and consistency are essential between the elements of the GPU, but in particular with the land use element. The circulation element, which identifies proposed improvements to the transportation system, may impact surrounding land uses and future development. The urban design element sets forth policies and programs to improve the city's design and urban form. The conservation element protects and maintains the city's natural, cultural, and other resources, with a focus on preserving aesthetics and the environmental quality of the city.

Both the land use element and the circulation element are described in more depth below. Focus areas and specific plan/special zoning areas are also described.

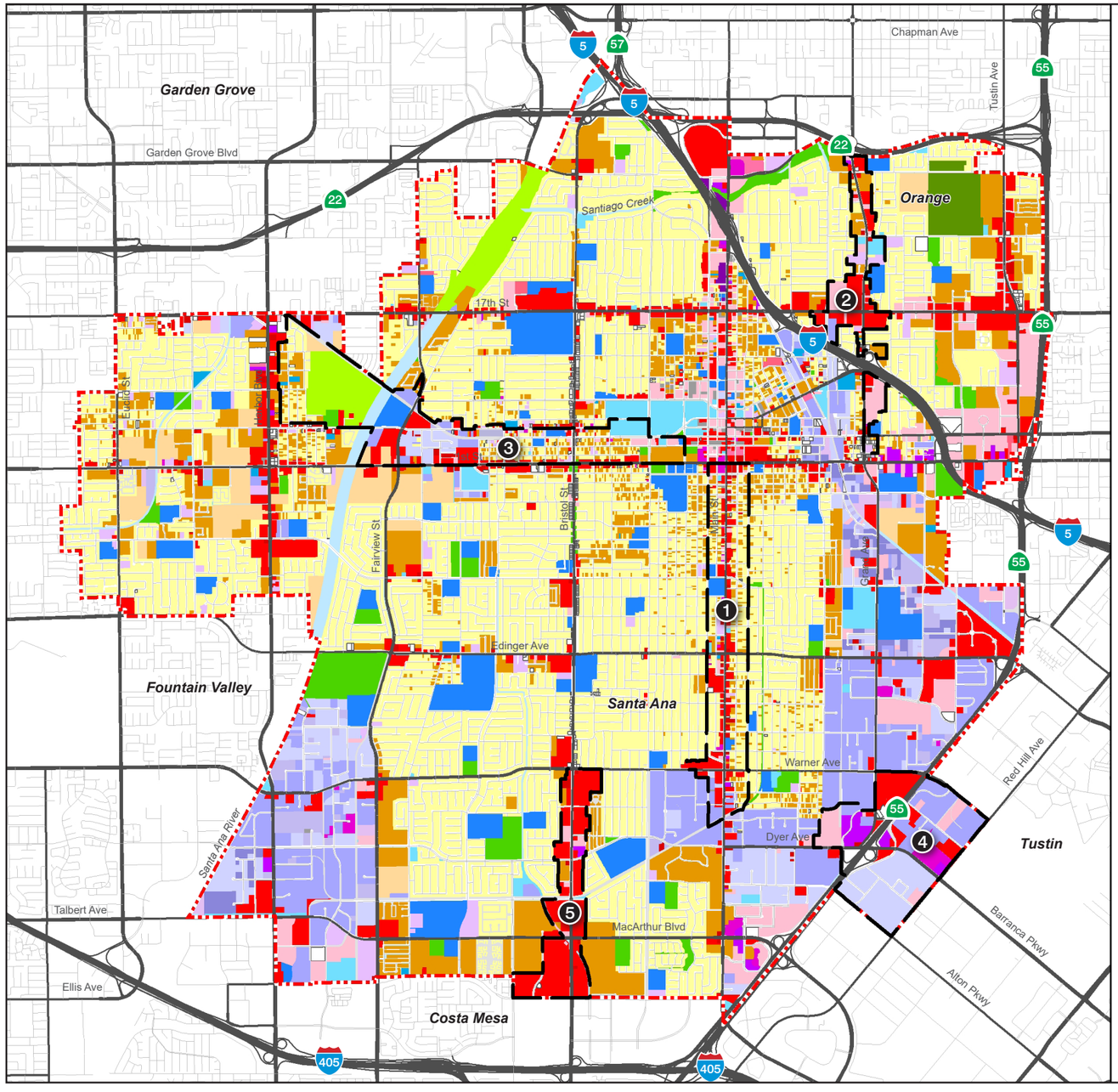
3.3.2.1 UPDATED LAND USE ELEMENT

The updated land use element will guide growth and development (e.g. infill development, redevelopment, use and revitalization/restoration) within the plan area by designating land uses as shown in the proposed land use map (see Figure 3-7, *Proposed General Plan Land Uses*). Figure 3-7 shows the 13 proposed land use designations of the General Plan update, and Table 3-4 gives a general description of the land use designations that are added to the GPU and were not in the current General Plan. Land use designations define the type and nature of development that would be allowed in a given location of the plan area. The land use designations and patterns shown in Figure 3-7 are intended to provide the basis for more detailed zoning designations and development intensities, requirements, and standards established in the City's development code.

Table 3-4 Land Use Designation Descriptions

Land Use Designation	General Character	Allowable Land Use
Corridor Residential	Typical density is 30 du/ac.	Medium urban density housing such as attached townhomes and apartments along corridors or adjacent to areas designated as General Commercial, Urban Neighborhood, or District Center
Industrial/Flex	The Industrial/Flex land use designation will promote large-scale office industrial flex spaces, multi-level corporate offices, and research and development uses. Typical FAR is 1.5.	Office/industrial flex spaces, small scale R&D, retail, live/work, and clean manufacturing.

Figure 3-4 - Existing Land Use



City of Santa Ana

Focus Areas

- Focus Area
- 1 South Main Street
- 2 Grand Ave/17th Street
- 3 West Santa Ana Boulevard
- 4 55 Fry/Dyer Road
- 5 South Bristol Street

Existing Land Use

- Single Family Residential
- Mobile Homes and Trailer Parks
- Multi-Family Residential
- Mixed Use
- Live/Work
- General Office
- General Commercial
- Auto Repair/Service
- Hotel/Motel
- Commercial Storage
- Light Industrial
- Wholesailing and Warehousing
- General Industrial
- Heavy Industrial
- Open Storage
- Government/Public Facility
- Parking Facility
- Museum
- Hospital
- Special Use Facility
- Religous Institution
- School; School (add College)
- Parks and Recreation
- Golf Course
- Cemetery
- Improved Flood Waterways
- Transportation/ROW
- Vacant

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Scale (Miles)

Source: City of Santa Ana, 2020

3. Project Description

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Figure 3-5a - City Photographs



Photo 1. View of I-5 with the Santa Ana Mountains to the northwest.



Photo 2. View of the Santa Ana downtown area.



Photo 3. View of the Orange County Courthouse in downtown Santa Ana.

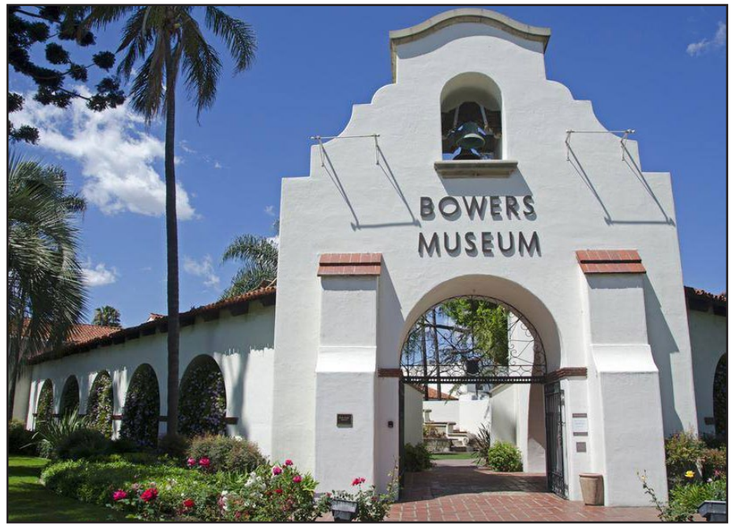


Photo 4. View of the Bowers Museum in the Museum District.



Photo 5. View of the Howe Waffle House Museum in downtown Santa Ana.

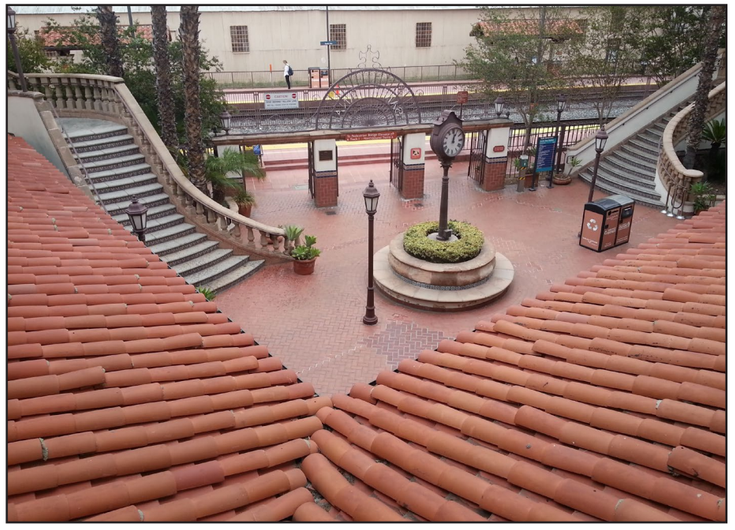


Photo 6. View of the courtyard at the Santa Ana Regional Transit Center.

3. Project Description

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Figure 3-5b - City Photographs



Photo 7. View of single-family land uses in Grand Avenue/17th Street focus area.



Photo 8. View of bike lanes on Bristol Street Corridor.



Photo 9. View of the entrance to the Mainplace Mall.



Photo 10. View of historic home in Floral Park.



Photo 11. View of historic home in Wilshire Square.

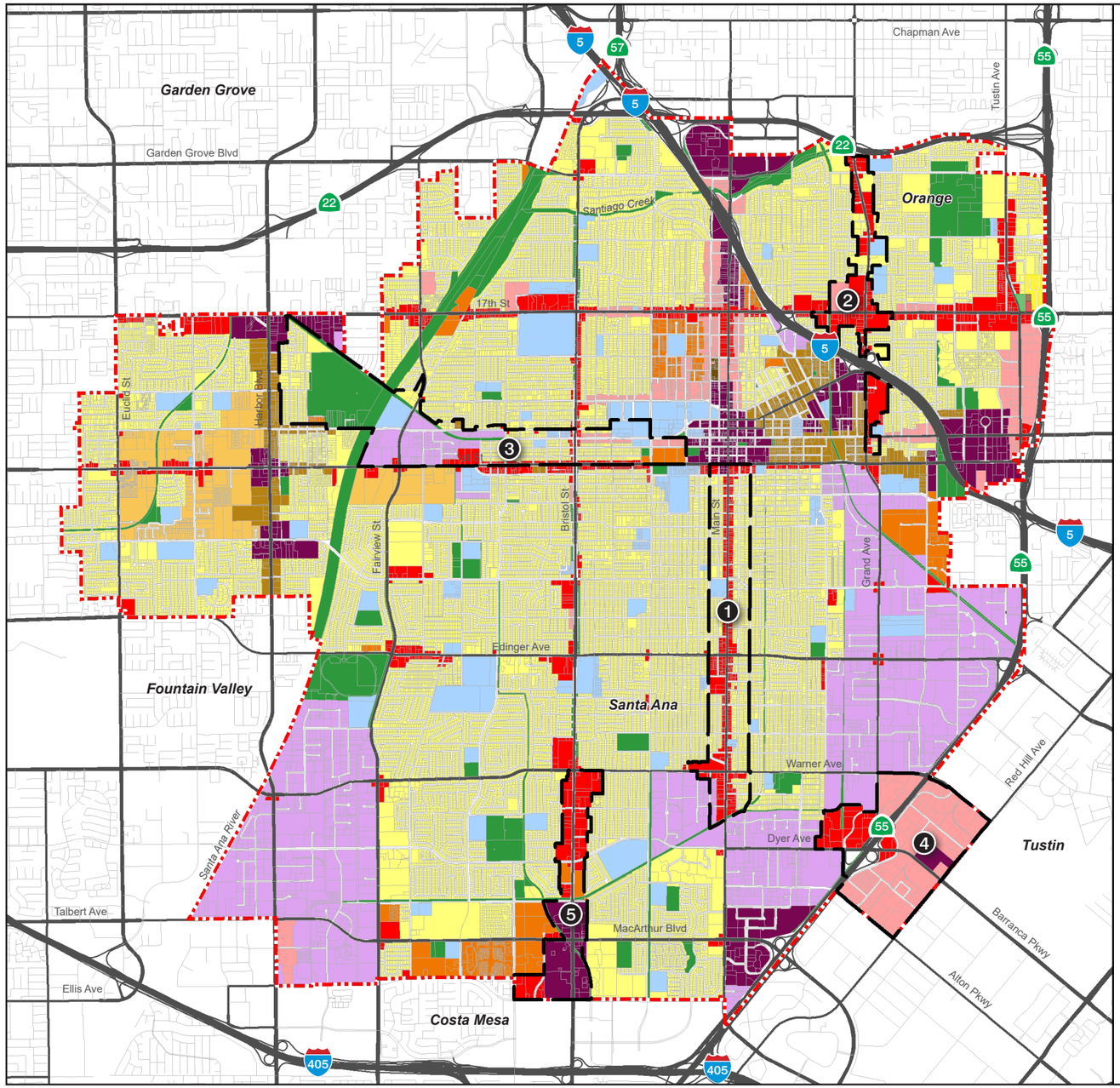


Photo 12. View of typical urban neighborhood.

3. Project Description

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Figure 3-6 - Current General Plan Land Use Plan



City of Santa Ana

Focus Areas

- Focus Area
- 1 South Main Street
- 2 Grand Ave/17th Street
- 3 West Santa Ana Boulevard
- 4 55 Fry/Dyer Road
- 5 South Bristol Street

Current General Land Use

- LR-7 Low Density Residential
- LMR-11 Low-Medium Density Residential
- MR-15 Medium Density Residential
- UN Urban Neighborhood
- GC General Commercial
- IND Industrial
- INS Institutional
- OS Open Space
- DC District Center
- PAO Professional & Administration Office
- OBPDC One Broadway Plaza District Center

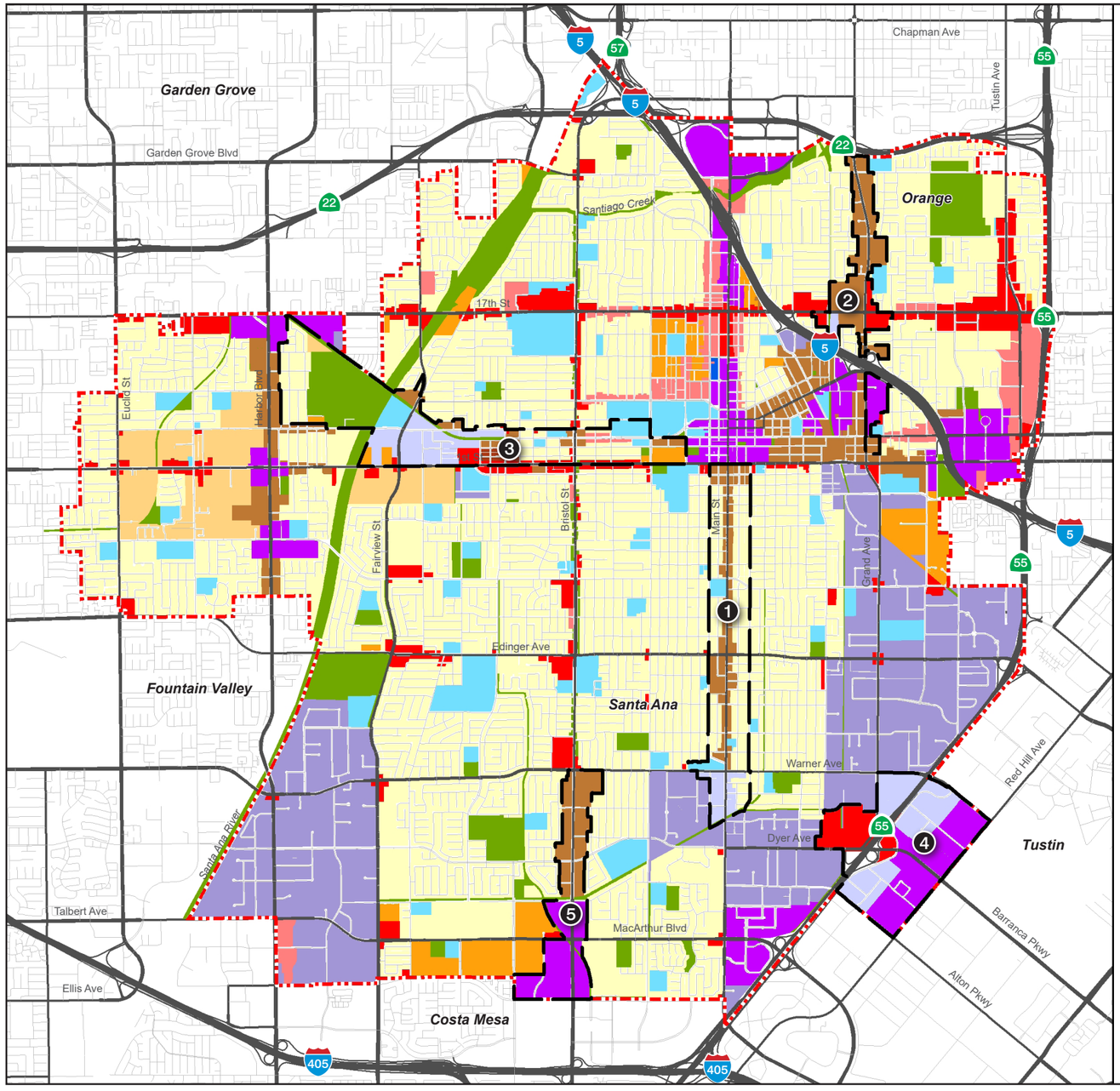
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Scale (Miles)

Source: City of Santa Ana, 2020

3. Project Description

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Figure 3-7 - Proposed General Plan Land Use Plan



City of Santa Ana

Focus Areas

- Focus Area
- 1 South Main Street
- 2 Grand Ave/17th Street
- 3 West Santa Ana Boulevard
- 4 55 Fry/Dyer Road
- 5 South Bristol Street

Proposed General Plan

- LR-7 Low Density Residential
- LMR-11 Low-Medium Density Residential
- MR-15 Medium Density Residential
- UN Urban Neighborhood
- CR Corridor Residential
- GC General Commercial
- IND Industrial
- FLEX Industrial/Flex
- INS Institutional
- OS Open Space
- DC District Center
- PAO Professional and Administrative Office
- OBPDC One Broadway Plaza District Center
- ROW

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Scale (Miles)

Source: City of Santa Ana, 2017

3. Project Description

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Table 3-5, *Proposed Land Use Designations and Statistics*, outlines the proposed land use designations and summarizes the acreage and total percentage of each land use designation within the entire plan area.

Table 3-5 Proposed Land Use Designations and Statistics

Land Use Designation	Acres	% of Total
Grand Avenue/17th Street	**171.5**	**100%**
District Center	23.7	13.8
General Commercial	19.9	11.6
Industrial/Flex	7.1	4.1
Open Space	1.1	0.6
Urban Neighborhood	119.7	69.8
55 Freeway/Dyer Road	**354.5**	**100%**
District Center	158.0	44.6
General Commercial	68.0	19.2
Industrial/Flex	127.4	35.9
Open Space	1.1	0.3
South Bristol Street	**199.9**	**100%**
District Center	108.3	54.2
Open Space	6.0	3.0
Urban Neighborhood	85.7	42.9
South Main Street	**312.2**	**100%**
Industrial/Flex	29.0	9.3
Institutional	19.2	66.1
Low Density Residential	162.3	845.8
Urban Neighborhood	101.7	62.7
West Santa Ana Boulevard	**481.6**	**100%**
Corridor Residential	10.0	2.1
General Commercial	21.5	4.5
Industrial/Flex	87.9	18.3
Institutional	45.5	9.4
Low Density Residential	108.1	22.4
Low-Medium Density Residential	6.8	1.4
Medium Density Residential	27.0	5.6
Open Space	133.6	27.7
Professional and Administrative Office	6.2	1.3
Urban Neighborhood	35.0	7.3
Balance of City	**11,598.8**	**100%**
District Center	124.2	1.1
General Commercial	424.2	3.7
Industrial	2,159.6	18.6
Institutional	886.7	7.6
Low Density Residential	6,173.3	53.2
Low-Medium Density Residential	429.0	3.7
Medium Density Residential	335.3	2.9
One Broadway Plaza District Center	4.1	0.0
Open Space	793.8	6.8
Professional and Administrative Office	260.4	2.2
Urban Neighborhood	4.1	0.0
Not Specified	4.1	0.0
TOTAL	**13,118.5**	**—**

Source: Figures aggregated and projected by PlaceWorks, 2020.

It is important to note that the updated land use element is a regulatory document that defines the framework for future growth and development in the plan area but does not directly result in development in and of itself. Before any project can be developed in the plan area, it must be analyzed for conformance with the General Plan update, zoning requirements, and other applicable local and state requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits.

3.3.2.2 UPDATED CIRCULATION ELEMENT

The circulation element update is integrally related to federal, state, and regional transportation programs as well as local plans and regulations. The City's role in transportation planning has become increasingly important, because recent legislation in the areas of growth management, congestion management, and air quality require more active local coordination to meet regional objectives. Furthermore, the circulation element update is intended to guide future development of the city's transportation system in a manner consistent with the updated land use element.

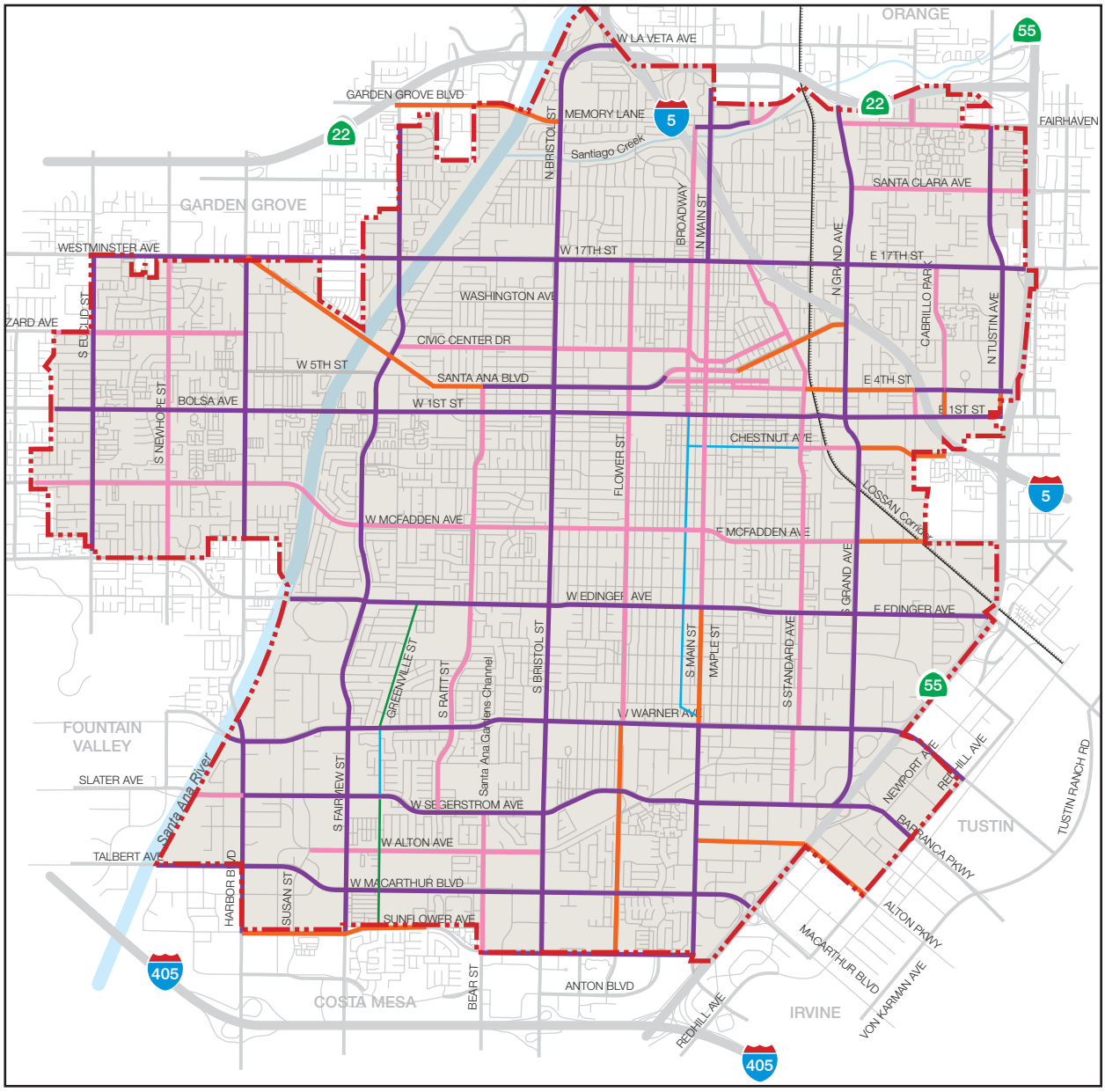
The *Master Plan of Streets and Highways (MPSH) (*Figure 3-8) details proposed street classifications to reflect buildout of the city's roadway system. The street classifications include Freeway, Major Arterial, Primary Arterial, Secondary Arterial, Divided Collector Arterial, and Collector Arterial. As part of the implementation of complete streets principles,[4] a series of modifications to the city's roadway network has been identified and includes both the reclassification of roadways and assignment of new MPSH roadway classifications to selected existing streets.

As illustrated in Figure 3-9, *Proposed Arterial Roadway Reclassifications*, a number of proposed roadway reclassifications, adoptions, and removals from the MPSH are as follows:

- Reclassified as Divided Collector Arterial:
  - Santa Clara Avenue between Grand Avenue and SR-55 freeway (currently Secondary Arterial)
  - Flower Street between Warner Avenue and 1st Street (currently Secondary Arterial)
  - Chestnut Avenue between Standard Avenue and eastern city limit (currently Secondary/Primary Arterial)
  - Raitt Street between Segerstrom Avenue and Santa Ana Boulevard (currently Secondary Arterial)
  - Civic Center Drive between Fairview Street and Bristol Street (currently Secondary Arterial)
  - Penn Way between I-5 on/off ramps and Washington Avenue (currently Secondary Arterial)
  - Santiago Street between Washington Avenue and 6th Street (currently Secondary Arterial)
  - Standard Avenue between 6th Street and Warner Avenue (currently Secondary Arterial)
  - Santa Ana Boulevard between French Street and Santiago Street (currently Primary Arterial)
  - Santa Ana Boulevard between Raitt Street and Flower Street (currently Major Arterial)
  - Cambridge Street between Fairhaven Avenue and SR-22 freeway (currently Secondary Arterial)

[4] Complete streets are transportation facilities that are planned, designed, operated, and maintained to provide safe mobility for all users, including bicyclists, pedestrians, transit vehicles, truckers, and motorists, appropriate to the function and context of the facility.

Figure 3-8 - Master Plan of Streets and Highways (MPSH)



- City of Santa Ana
- Principal
- Freeway
- Major Arterial
- Primary Arterial
- Secondary Arterial
- Divided Collector
- Collector

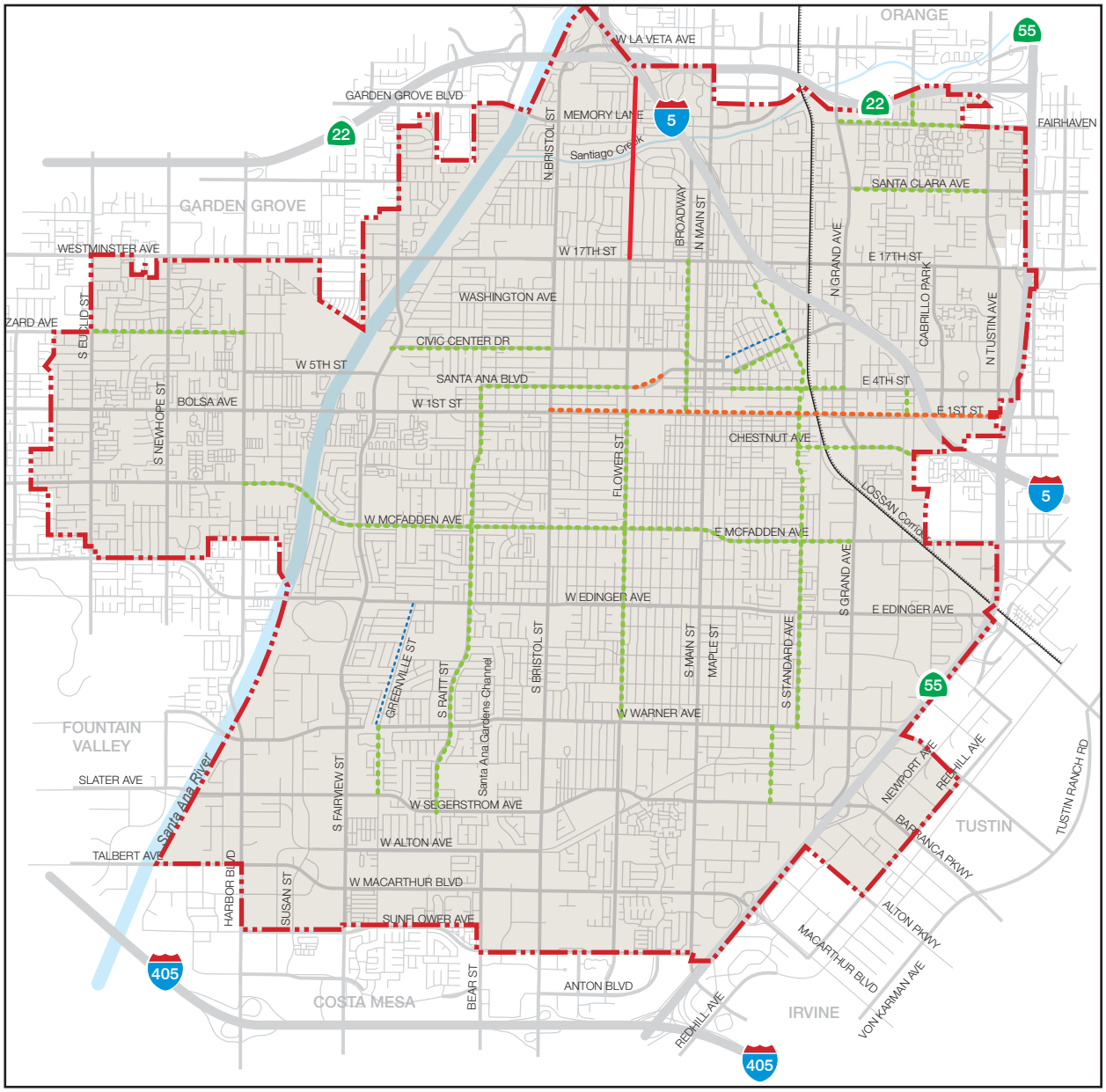
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Scale (Miles)

Source: IBI, 2020

3. Project Description

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Figure 3-9 - Proposed Arterial Roadway Reclassifications



City of Santa Ana
Freeway
Primary Arterial
Divided Collector Arterial
Collector
Local Street/Delete from MPSH Network

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Scale (Miles)

Source: IBI, 2020

3. Project Description

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- Hazard Avenue between Euclid Street and Harbor Boulevard (currently Secondary Arterial)
- Halladay Avenue between Warner Avenue and Dyer Road (currently Secondary Arterial)
- McFadden Avenue between Harbor Boulevard and Grand Avenue (currently Secondary Arterial)
- Broadway between 1st Street and 17th Street (currently Secondary Arterial)
- 4th Street between French Street and Grand Avenue (currently Primary/Secondary Arterial)
- Fairhaven Avenue from Grand Avenue to Tustin Avenue (currently Secondary Arterial)

- Reclassified as Primary Arterial:
  - Santa Ana Boulevard between Flower Street and Ross Street (currently a Major Arterial)
  - 1st Street between Bristol Street and Tustin Avenue (currently Major Arterial)

- Reclassify as Collector Arterial:
  - Civic Center Drive between French Street and Santiago Street (currently a Secondary Arterial)

- Add the following to the MPSH as Divided Collector Arterial:
  - Greenville Street between Segerstrom Avenue and Warner Avenue

- Add the following to the MPSH as Collector Streets:
  - Greenville Street between Edinger Avenue and Warner Avenue

- Remove the following from the MPSH
  - Flower Street between 17th Street and its northern terminus
  - Logan Street between Civic Center Drive and Santa Ana Boulevard

The majority of the proposed reclassifications aim to reduce existing rights-of-way for vehicular traffic lanes to make room for bicycle and pedestrian improvements. Landmark streets are also identified within or adjacent to the Santa Ana Downtown Historic District, which is listed on the National Register of Historic Places. Table 3-6 describes each type of street classification in Santa Ana.

Table 3-6 Street Classifications in Santa Ana

Street Classification	Description
Freeway	Freeways are multi-lane, limited-access, high-volume, high-speed roadways constructed for regional and interregional vehicular travel. Access to these facilities is restricted to interchange ramps at selected roadways along their route. Freeways are under the jurisdiction of the California Department of Transportation (Caltrans).
Major Arterial	Generally consists of six-travel lanes, and is also divided. Typically, the right-of-way width for this type of roadway is 120 feet. A major arterial is designed to accommodate between 33,900 and 50,600 vehicle trips daily.
Primary Arterial	Generally consists of a four-lane, divided roadway. Typically, the right-of-way width is 100 feet. A primary arterial is designed to accommodate between 22,500 and 33,800 vehicle trips daily.
Secondary Arterial	Generally a four-lane, undivided roadway. The typical right-of-way width for this category of roadway is 80 feet. A secondary arterial is typically designed to accommodate between 15,000 and 22,500 vehicle trips daily.
Divided Collector Arterial	Generally a two-lane roadway with a continuous center two-way left-turn lane. The typical right-of-way width is 80 feet, for the purpose of allocating right-of-way to bicycle and pedestrian use. A divided collector arterial is designed to accommodate up to 22,000 vehicle trips per day.
Collector Street	A two-lane, undivided roadway carrying less than 10,000 vehicle trips per day. The right-of way width for this roadway classification is 60 feet. Collector Streets are also two-lane undivided roadways with a right-of-way width of 56 feet.

The circulation element update incorporates the proposed Santa Ana-Garden Grove Fixed Guideway project, which will introduce new transit service to the city. Santa Ana is working with Garden Grove and Orange County Transit Authority to build a fixed guideway system called the OC Streetcar. Expected to begin operations in 2021, the OC Streetcar will link the Santa Ana Regional Transportation Center to a new multimodal hub at Harbor Boulevard/Westminster Avenue in Garden Grove (see Figure 3-10, *Master Plan of Transit*). OC Streetcar will serve historic downtown Santa Ana and Civic Center. Along its four-mile route, OC Streetcar will connect with 18 Orange County Transit Authority bus routes and increase transportation options along Santa Ana Boulevard, 4th Street, the Pacific Electric right-of-way, and Harbor Boulevard.

3.3.2.3 FOCUS AREAS

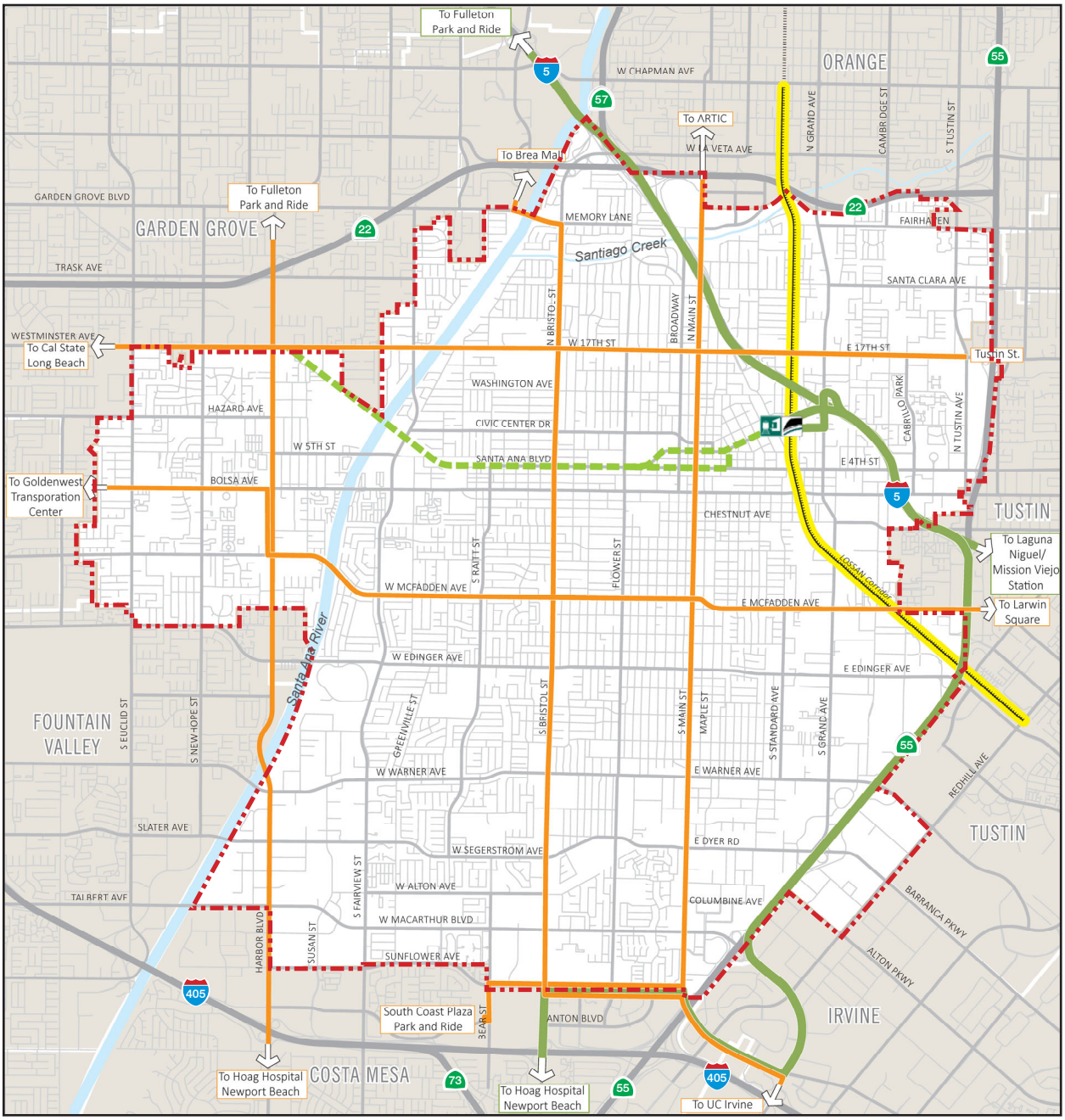
The five focus areas of the plan area are shown in Figure 3-11, *Focus Areas and Special Planning Areas,* and described below. Figures 3-12 through 3-16 shows the existing and proposed land uses for each focus area.

South Main Street Focus Area

The South Main Street focus area introduces the opportunity for greater flexibility and a more dynamic mix of land uses and urban design along the properties fronting Main Street. The intent is to transition an auto-dominated corridor into a transit- and pedestrian-friendly corridor through infill development without disrupting the surrounding lower-density neighborhoods. The objectives of this focus area are:

- Facilitate redevelopment and property improvements along Main Street.
- Create a more active and dynamic streetscape.
- Protect established residential neighborhoods.
- Support transit, pedestrian, and nonmotorized travel.

Figure 3-10 - Master Plan of Transit



City of Santa Ana

OCTA Transit Opportunity Corridor

OCTA Freeway Transit Opportunity Corridor

Future Alignment of OC Street Car

Metrolink and Amtrak Commuter Rail

Santa Ana Regional Transportation Center

Metrolink Station

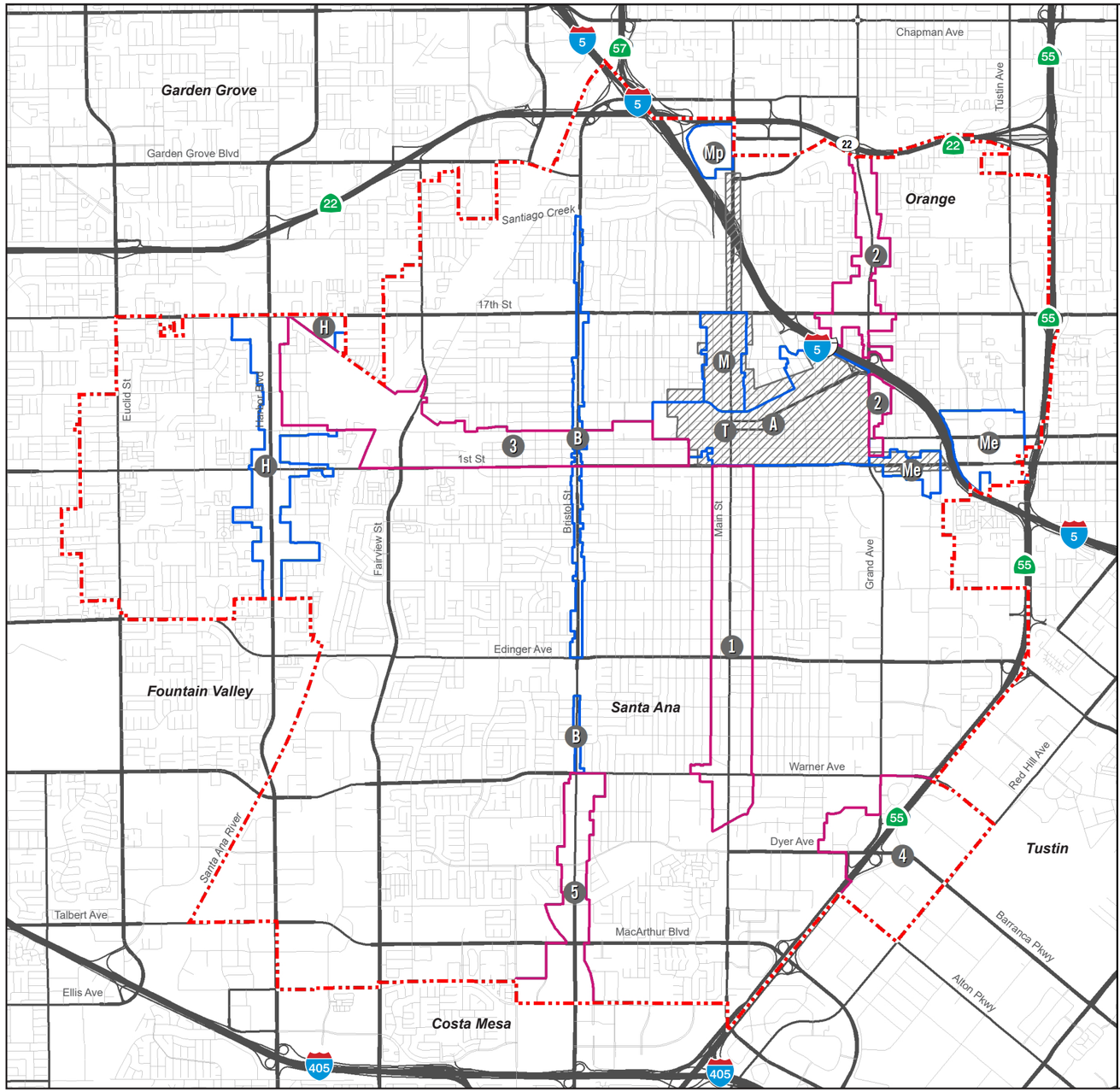
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Scale (Miles)

Source: City of Santa Ana, 2019

3. Project Description

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Figure 3-11 - Focus Areas and Special Planning Areas



City of Santa Ana

Focus Areas

- 1 South Main Street
- 2 Grand Ave/17th Street
- 3 West Santa Ana Boulevard
- 4 55 Freeway/Dyer Road
- 5 South Bristol Street

Adopted and Existing Areas

- B Bristol Street Corridor Specific Plan
- H Harbor Mixed use Transit Corridor Specific Plan
- M Midtown Specific Plan
- Me Metro East Mixed Use Overlay Zone
- Mp Main Place Specific Plan
- T Transit Zoning Code
- A Adaptive Reuse Project Incentive Area

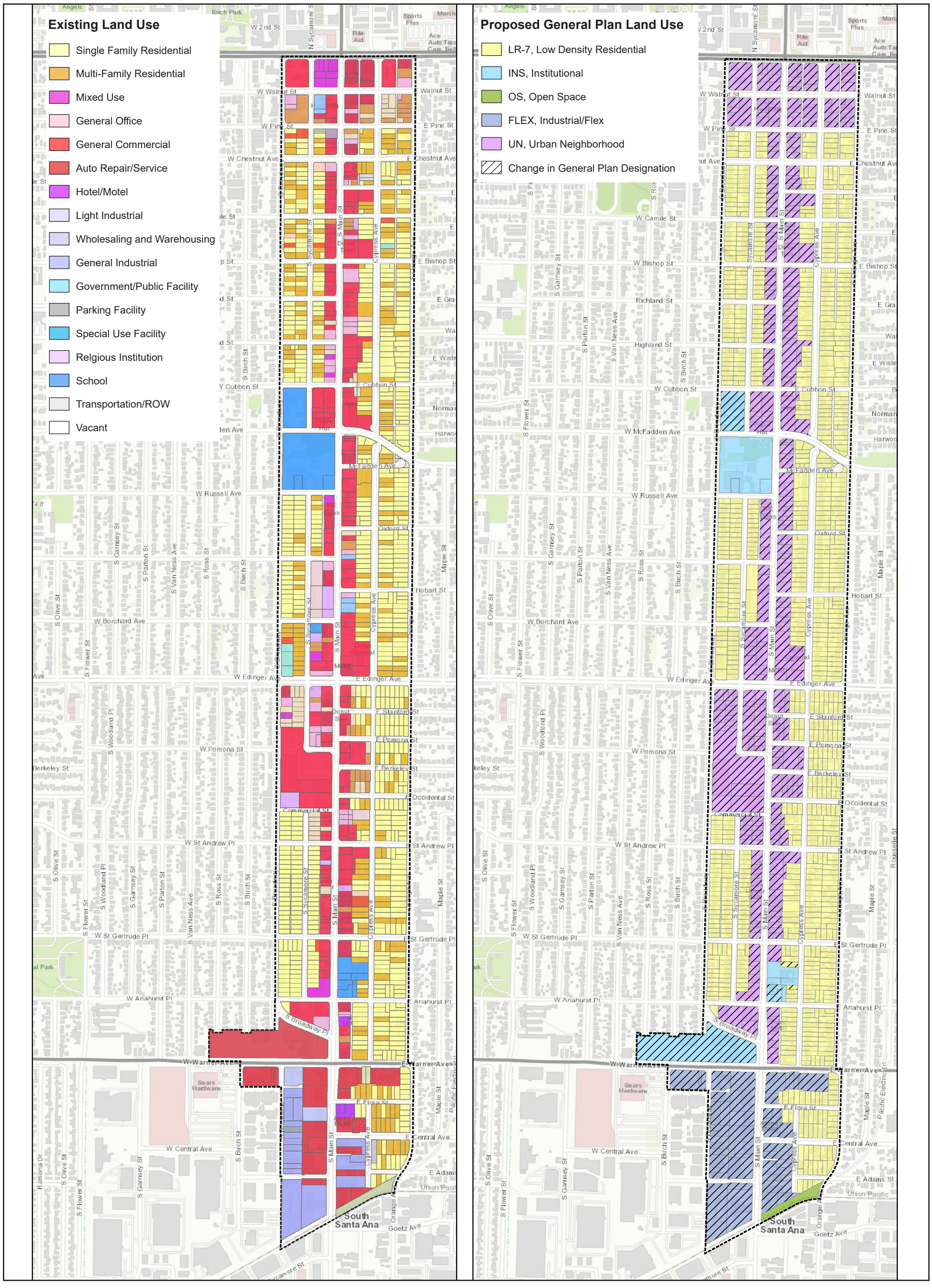
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Scale (Miles)

Source: City of Santa Ana, 2019

3. Project Description

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Figure 3-12 - South Main Street Focus Area Existing vs. Proposed Land Use

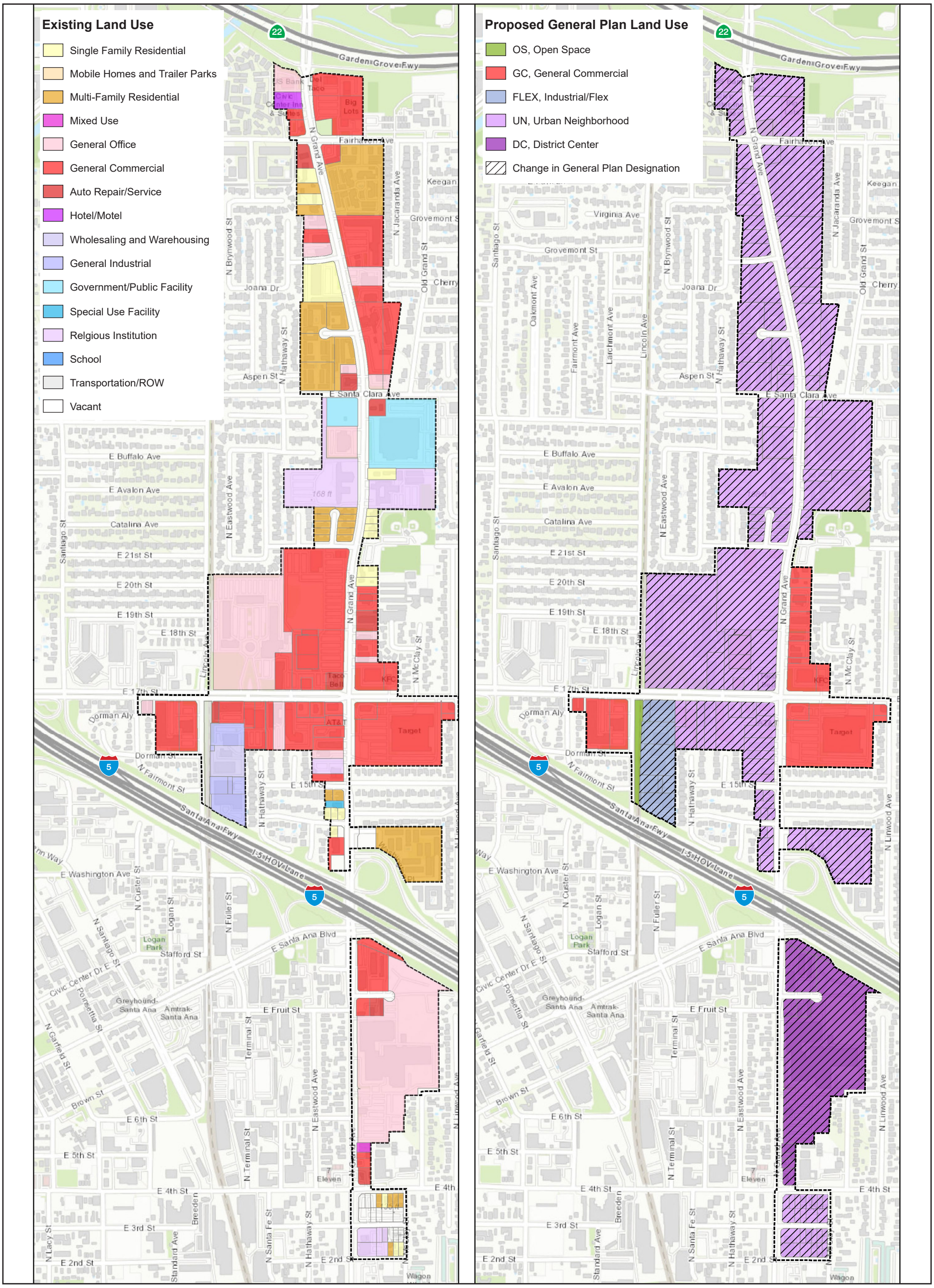


Source: PlaceWorks, 2020

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Figure 3-13 - Grand Avenue/17th Street Focus Area Existing vs. Proposed Land Use

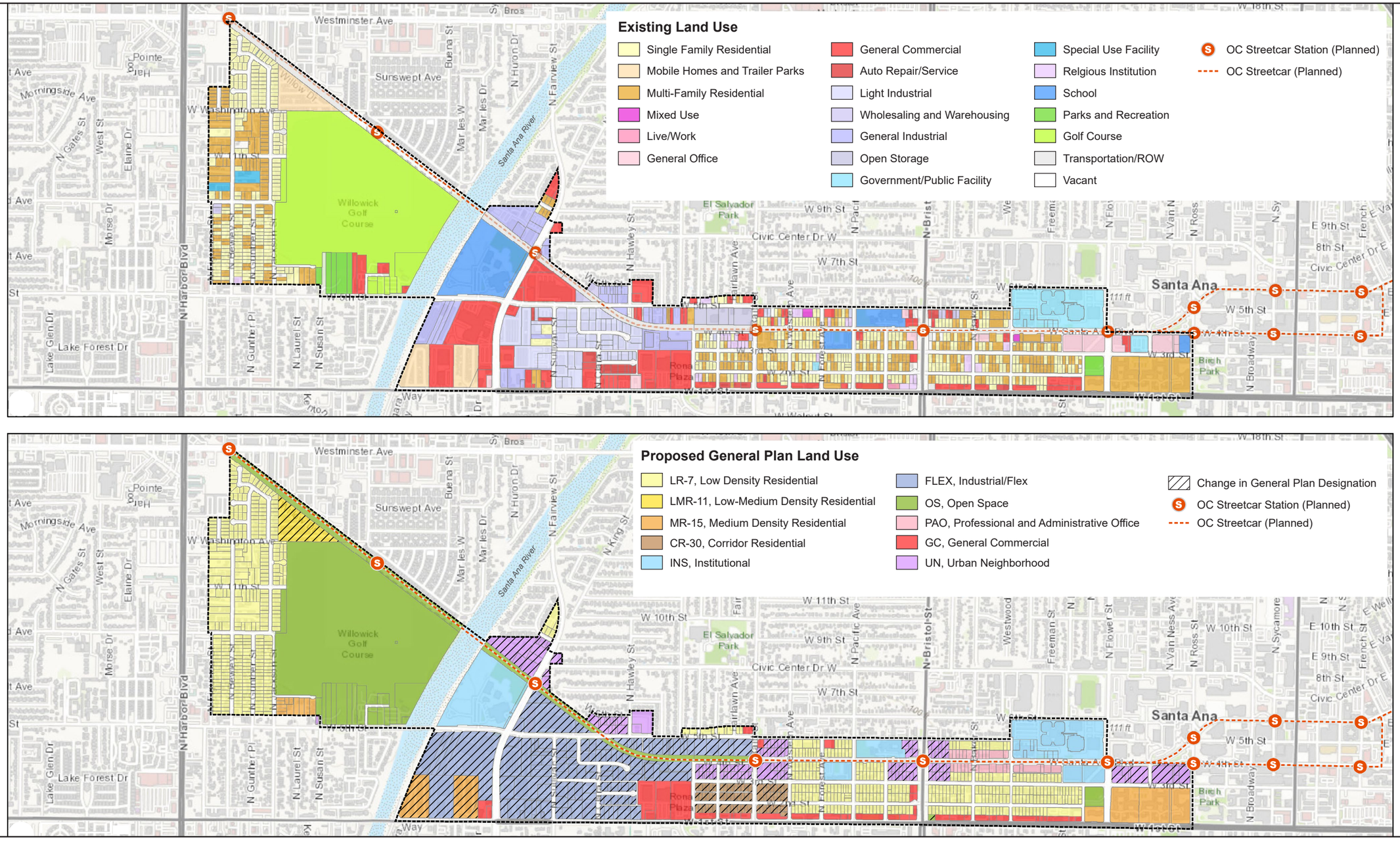


Source: PlaceWorks, 2020

3. Project Description

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Figure 3-14 - West Santa Ana Boulevard Focus Area Existing vs. Proposed Land Use

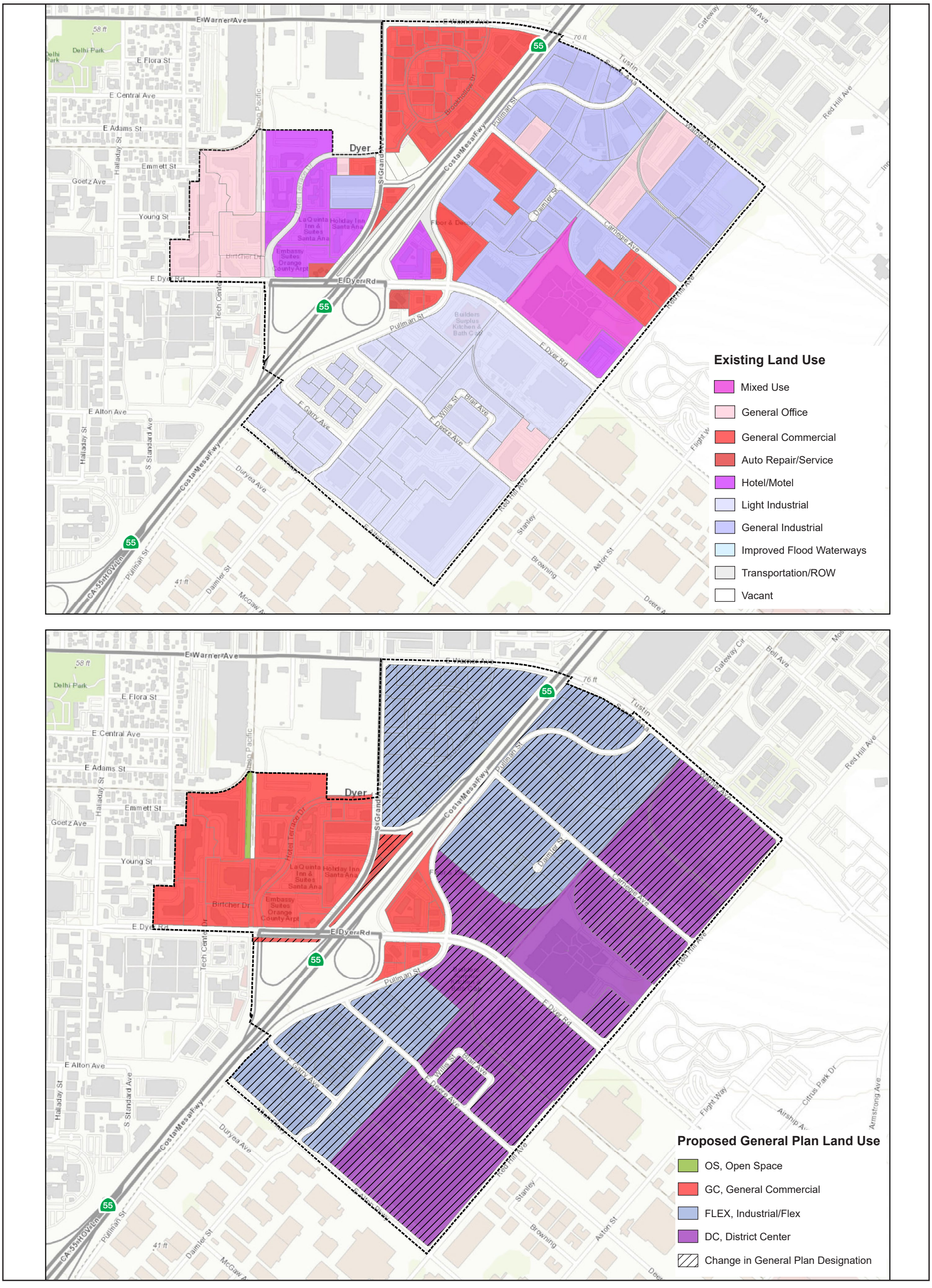


Source: PlaceWorks, 2020

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Figure 3-15 - 55 Freeway/Dyer Road Focus Area Existing vs. Proposed Land Use

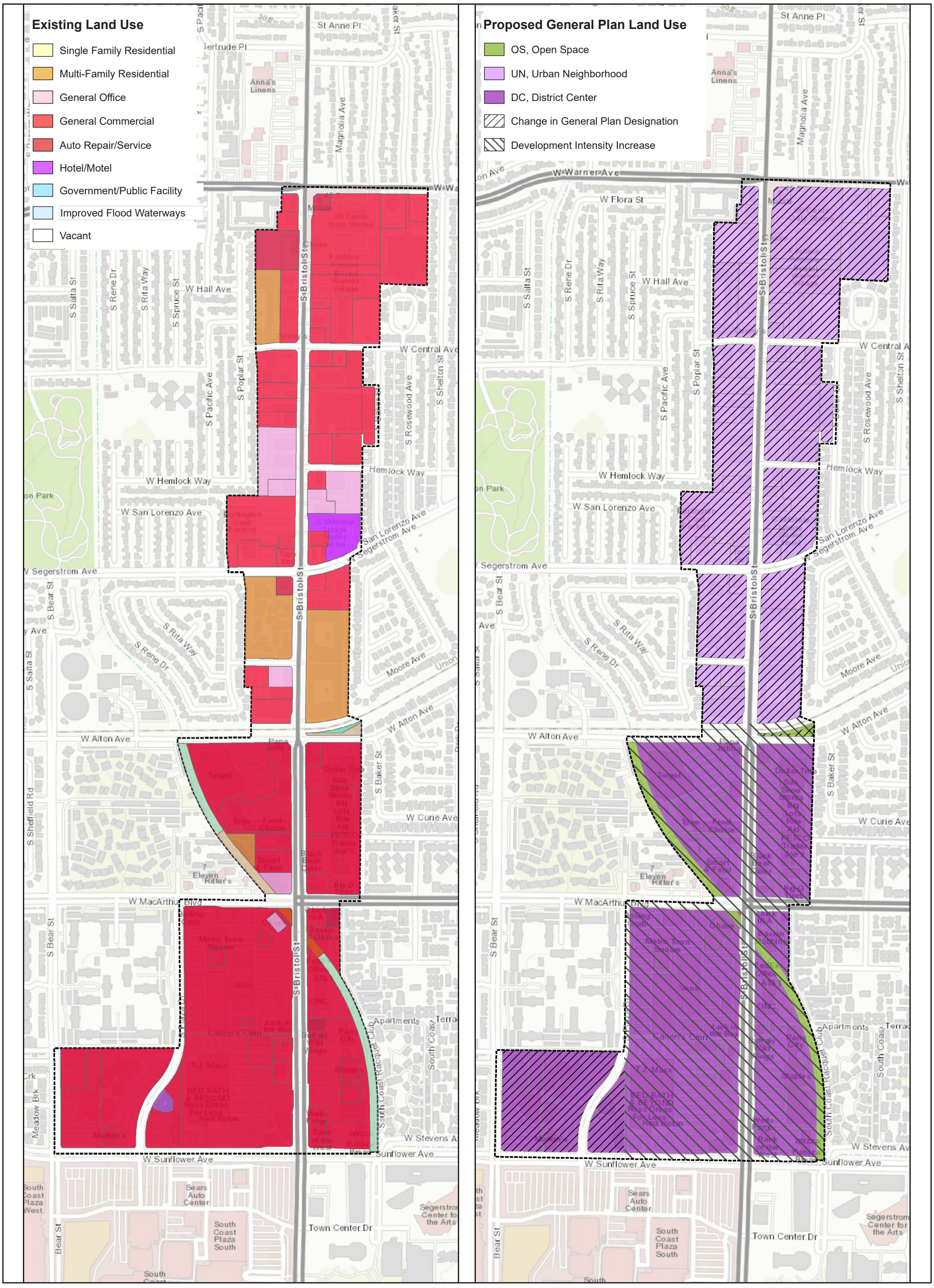


Source: PlaceWorks, 2020

3. Project Description

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Figure 3-16 - South Bristol Street Focus Area Existing vs. Proposed Land Use



Source: PlaceWorks, 2020

3. Project Description

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The majority of properties fronting Main Street will be designated Urban Neighborhood, allowing for future development to include commercial uses, low- and medium-density housing, or a combination of both in a vertically mixed-use format. South of Warner Avenue, the Industrial/Flex designation will offer new options for small-scale manufacturing, live-work, and retail opportunities.

The balance of the focus area will remain designated for Low Density Residential or Institutional to reflect the existing development patterns and land uses. New buildings and spaces will be sensitive to the surrounding low-density neighborhoods while still emphasizing the creation of active and attractive urban spaces.

Grand Avenue / 17th Street Focus Area

The Grand Avenue / 17th Street focus area will foster the development of an urban mixed-use corridor connecting into the city's downtown and transit core. The intent is to create opportunities for a new mix of land uses and design to transition Grand Avenue from a series of auto-oriented shopping plazas to a series of dynamic urban spaces. The objectives of this focus area are:

- Create mixed-use corridors and urban villages.
- Promote infill development while respecting established neighborhoods.
- Foster community spaces and neighborhood-serving amenities.
- Develop opportunities for live-work, artist spaces, and small-scale manufacturing.
- Maintain compatible nodes of commercial activity.

The majority of land in this focus area is planned for Urban Neighborhood or District Center land use designations, which will allow a blend of residential and commercial uses to develop simultaneously, as market conditions allow. An intense mixed-use area is envisioned adjacent to the Santa Ana Regional Transportation Center, along the east side of Grand Avenue south of I-5. This part of the focus area will support larger, more visually dynamic buildings and urban spaces that complement and benefit from the adjacent regional transit center.

North of I-5, the buildings and spaces will be sensitive to the surrounding low-density neighborhoods but will still emphasize the creation of active and attractive urban spaces. A mix of residential, retail, and office will be interspersed along the frontage of Grand Avenue, with a concentrated node of commercial and mixed-use residential uses at Grand Avenue and 17th Street. A small portion of the focus area is designated for Industrial/Flex and General Commercial to support small-scale manufacturing, live-work, and retail opportunities will be located along 17th Street near the Regional Transportation Center.

West Santa Ana Boulevard Focus Area

The West Santa Ana Boulevard focus area connects the Harbor Mixed Use Transit Corridor Specific Plan area and Downtown Santa Ana, and the OC Streetcar Project improvements will create the physical transit link in 2022. The intent is to transition a group of auto-oriented neighborhoods, businesses, and institutions into a series of transit-oriented neighborhoods that support and benefit from future streetcar stops. The objectives of this focus area are:

- Develop housing and mixed-use opportunities near streetcar stations.
- Promote infill development while respecting established neighborhoods.
- Buffer industrial land uses and residential neighborhoods.
- Create opportunities for clean industrial/maker-type spaces.

The Urban Neighborhood land use designation will allow for more mixed-use and transit-oriented development near future streetcar stops. Near the Raitt streetcar stop, the Corridor Residential land use designation will facilitate additional opportunities for higher density residential development. Similarly, the existing industrial portion of the focus area will be designated for Industrial/Flex to promote small-scale manufacturing, live-work, and retail opportunities.

Both the Urban Neighborhood and Corridor Residential designations will serve as transitions between the low-density residential neighborhoods and the areas planned for industrial uses or streetcar stops. Much of the focus area will remain planned for low-density residential, general commercial, open space, and key institutional uses. New buildings and spaces will be sensitive to the surrounding low-density neighborhoods but will still incorporate building and street designs consistent with transit-oriented urban form and active and attractive urban spaces.

55 Freeway / Dyer Road Focus Area

The 55 Freeway / Dyer Road focus area will transition from a portion of the city that is almost exclusively professional office to one that supports a range of commercial, industrial/flex, and mixed-use development. The intent is to create opportunities for a truly urban lifestyle with easy access to Downtown Santa Ana, multiple transit options, and the new investments and amenities in adjacent communities. The objectives of this focus area are:

- Provide housing opportunities at an urban level of intensity at the city's edge.
- Enhance opportunities for corporate offices.
- Attract economic activity into the city from surrounding communities.
- Protect industrial and office employment base.
- Maintain hotel and commercial uses.

The overall scale and experience of the focus area along the freeway and city boundary will reflect an urban intensity and design, with inspiring building forms and public spaces. At the southeastern edge, the District Center land use designation will facilitate large residential mixed-use developments in structures that incorporate high-density housing, hotels, and complementary expansions of commercial uses. Adjacent to the 55 freeway, the Industrial/Flex land use designation will promote large-scale office-industrial flex spaces, multilevel corporate offices, and research and development uses.

The node surrounding the freeway interchange will remain as currently planned for General Commercial uses, with new improvements introducing development and spaces that complement the existing examples and elements.

South Bristol Street Focus Area

The South Bristol Street focus area represents Santa Ana's southern gateway and is a part of the South Coast Metro area. Between Sunflower and Alton Avenues, the District Center land use designation will create opportunities to transform auto-oriented shopping plazas to walkable, bike-friendly, and transit-friendly urban villages that incorporate a mix of high intensity office and residential living with experiential commercial uses. The objectives of this focus area are:

- Capitalize on the success of the South Coast Metro area.
- Introduce mixed-use urban villages and encourage experiential commercial uses that are more walkable, bike friendly, and transit oriented.
- Provide for mixed-use opportunities while protecting adjacent, established, low-density neighborhoods.

Between MacArthur Boulevard and Alton Avenue, the form and intensity will scale down but remain distinctly urban in nature. The redevelopment of the auto-oriented commercial plazas will result in the construction of landmark buildings and structures set in and around spaces accessible to future occupants and the general public. The corridor north of Alton Avenue is planned with the Urban Neighborhood land use designation, allowing for commercial and residential projects, frequently in a mixed-use format, to develop in accordance with market fluctuations. The buildings and spaces in this part of the focus area will be sensitive to the surrounding low-density neighborhoods but will still emphasize the creation of active and attractive urban spaces.

3.3.2.4 SPECIFIC PLAN/SPECIAL ZONING

There are seven planning areas that represent specific plans and other special zoning areas that were previously adopted: Adaptive Reuse Project Incentive Area (2014), Bristol Street Corridor Specific Plan (1991/2018), Harbor Mixed Use Transit Corridor Specific Plan (2014), MainPlace Specific Plan (2019), Metro East Mixed-Use Overlay Zone (2007/2018), Midtown Specific Plan (1996), and Transit Zoning Code Specific Development (2010). The most recent adoption/amendment date for each document is noted in parentheses. The special planning areas are shown in Figure 3-11.

Adaptive Reuse Project Incentive Area

The Adaptive Reuse Ordinance, Section 41-1651 of the Santa Ana Municipal Code, provides alternative building and fire standards for the conversion of eligible buildings, or portions thereof, from nonresidential uses to dwelling units, guest rooms or joint living, and work quarters. Eligible structures are buildings within the Adaptive Reuse project incentive area that were constructed in accordance with building and zoning codes in effect prior to July 1, 1974, or which have been determined to be a Historically Significant. The Project Incentive Area includes properties in the Midtown Specific Plan area; the Transit Zoning Code area; the Metro East Mixed-Use Overlay Zone; the North Main Street Corridor on both sides of Main Street, from 17th Street to the northernmost MainPlace Drive; and the East 1st Street Corridor on both sides of 1st Street from Grand

Avenue to Elk Lane. Residential uses are allowed in the Project Incentive Area irrespective of the underlying zoning as part of an approved Adaptive Reuse Project (Santa Ana 2014a).

Bristol Street Corridor Specific Plan

The Bristol Street Corridor Specific Plan was adopted in May 1991 and amended in March 2018. The plan provides the framework for development of a 3.9-mile section of the Bristol Street corridor in central Santa Ana. The planning area extends along both sides of Bristol Street between Warner Avenue and Memory lane. Property within the planning area corresponds to parcels identified by the former redevelopment agency as being subject to eminent domain procedures as a result of right-of-way acquisition requirements of the Bristol Street Widening Project. The specific plan primarily aims to reduce and prevent blight conditions, promote new and continuing private-sector investment, expand the community's supply of housing, and redevelop areas that are stagnant or underutilized (Santa Ana 2018a).

Harbor Mixed Use Transit Corridor Specific Plan

The Harbor Mixed Use Transit Corridor Specific Plan covers the 2.5-mile segment of Harbor Boulevard on the west side of Santa Ana. The approximately 305-acre planning area includes parcels adjacent to Harbor Boulevard between Westminster Avenue and Lilac Avenue as well as parcels along Westminster Avenue, 1st Street, and 5th Street. The Harbor Mixed Use Transit Corridor Specific Plan creates the zoning necessary to take advantage of the regional and local transit investments made along and around Harbor Boulevard. The plan expands development options to include residential alongside or integrated into a mix of nonresidential uses (Santa Ana 2014b).

MainPlace Specific Plan

The purpose of the MainPlace Specific Plan is to transform MainPlace mall into a family-oriented retail, entertainment, and dining destination. The plan creates a mixed-use urban village with a revitalized mall at its central core. The Specific Plan area is on the north edge of Santa Ana, between Main Street on the east and SR-22 and I-5 to the north and west. The property is identified in the current General Plan land use element as District Center. The District Center designation includes the major activity areas of the city, designed to serve as anchors to the city's commercial corridors and to accommodate major development activity. No General Plan amendment is required for the specific plan, and the MainPlace Specific Plan is the zoning for the property and defines the allowable uses within its boundaries (Kimley Horn 2019).

Metro East Mixed-Use Overlay Zone

The Metro East Mixed Use (MEMU) Overlay Zone consists of an original MEMU Overlay Zone and an expansion component. The original MEMU Overlay Zone is largely developed with commercial and office uses and comprises approximately 200 acres immediately east of the I-5 and immediately west of SR-55. It is bounded by I-5 on the west and south, Tustin Avenue on the east, and East Sixth Street on the north. The MEMU expansion area added 33.52 acres or approximately 48 parcels to the original MEMU Overlay Zone area. The additional project area extends west primarily along First Street and is generally bounded by the I-5 to the east, Grand Avenue to the west, East Chestnut Avenue to the south, and Fourth Street to the north.

The overall objectives of the MEMU Overlay Zone are to encourage a more active commercial and residential community, provide an expanded economic base, maximize property sales tax revenues, improve the jobs/housing balance within the city, and provide for a range of housing options identified in the 2014 housing element (Santa Ana 2018b).

Midtown Specific Plan

The Midtown Specific Plan area is generally bounded by 17th Street to the north, Civic Center Drive to the south, North Ross Street to the west, and North Spurgeon Street to the east. The Midtown area is readily accessible from the Santa Ana Freeway (I-5). Midtown is envisioned as an integrated district of civic, business, cultural, and retail activity with a small residential component (Santa Ana 1996).

Transit Zoning Code Specific Development

The City adopted a Transit Zoning Code to provide zoning for the integration of new infill development into existing neighborhoods; to allow for the reuse of existing structures; to provide for a range of housing options, including affordable housing; and to provide a transit-supportive, pedestrian-oriented development framework to support the addition of new transit infrastructure. The code encompasses an area in the central urban core of Santa Ana that comprises over 100 blocks and 450 acres. The area is west of I-5 and bounded by First Street on the south, Flower Street on the west, Grand Avenue on the east, and Civic Center Drive on the north (Santa Ana 2010).

3.3.2.5 GENERAL PLAN BUILDOUT SCENARIO

In general, many areas currently designated for General Commercial and Professional Office will expand opportunities for residential development by a proposed change in General Plan land use designation to Urban Neighborhood or District Center. Industrial Flex will be introduced in each of the five focus areas and replace Industrial land use designations that currently exist to allow for cleaner industrial and commercial uses with live-work opportunities.

Furthermore, state law allows a graduated density bonus for the inclusion of affordable housing units For an increasing amount of affordable units (by percentage), a project is allowed an increasing ability to exceed the permitted density (up to a cap of 35 percent). Recent updates to state housing law (Assembly Bill 1763, effective January 1, 2020), enables projects that are 100 percent affordable (either 100% lower income or 80% lower and 20% limited moderate), to obtain a density bonus of 80 percent, or no limit if within one-half mile of a major transit stop. However, not every proposed project pursuant to the GPU would include affordable units and not every project that includes affordable units would need a density bonus. Proposed projects pursuant to the GPU are not required to build at densities that exceed maximum limits; the law only requires that jurisdictions grant the density bonus if requested. The buildout methodology for the GPU was based on past development trends, current development trends, and a forecasted market analysis. These trends accounted for any units approved (density bonus or otherwise), to determine the appropriate density and amount of development to assume.

Additionally, the optimal density of affordable units is at or below the density levels assumed for forecasting buildout. Generally, projects beyond 50 to 70 units per acre require Type 1 construction (steel and concrete structure), which is dramatically more expensive compared to Type V construction (wood structure). Accordingly, affordable projects are rarely greater than 70 units per acre except for very small parcels. The average densities used to calculate projected buildout at 2045 are 50 to 90 units per acre in the three most intense focus areas; 55 Freeway/Dyer Road, Grand Avenue/17th Street, and South Bristol Street focus areas. For the remaining two focus areas, a residential assumption at 30 units per acre was used over a broad area to account for development at or above the maximum density of 30 units per acre. The maximum is 20 units per acre for projects proposed exclusively residential in the South Main Focus Area. The maximum is 30 units per acre for a relatively small part of the West Santa Ana Boulevard Focus Area. The City's buildout projections are therefore considered to include and account for the application of density bonus provisions of state law to future projects.

Furthermore, the potential for development in specific plan and special zoning areas (see Section 3.3.2.1) is based on the forecast buildout at the time of the respective zoning document's adoption, minus the amount of new development built between the adoption date and 2019.

Growth outside of the focus areas and special planning areas is expected to be incremental and limited. Some growth was projected for the professional office surrounding the Orange County Global Medical Center and along Broadway north of the Midtown Specific Plan. Some growth was also projected for the commercial and retail area south of the West Santa Ana Boulevard focus area. Finally, some additional residential development is expected on a small portion (5 percent) of single-family and multifamily lots through the construction of second units.

Table 3-7 shows existing and buildout population numbers, and Table 3-8 provides a statistical summary of existing conditions and buildout numbers for housing units, nonresidential square footage, and jobs. For the focus areas, the forecast buildout is based on development at approximately 80 percent of the maximum allowed development for each respective land use designation as detailed in Appendix B-b, *Santa Ana Buildout Methodology*. Figure 3-7 displays the draft General Plan Land Use Map, and Figure 3-8 illustrates the boundaries of the five focus areas and special planning areas. Table 3-9 shows the breakdown of single-family and multifamily housing units for existing conditions and buildout of the GPU.

Table 3-7 General Plan Update Existing and Buildout Population

Planning Area	Existing Population	Buildout Population	Percentage Growth
FOCUS AREAS	**36,777**	**77,650**	**111**
55 Freeway/Dyer Road	9,034	31,050	244
Grand Avenue/17th Street	2,079	7,129	243
South Bristol Street	8,390	19,176	129
South Main Street	6,970	7,643	10
West Santa Ana Boulevard	10,304	12,652	23
ALL OTHER AREAS OF THE CITY	**297,997**	**353,979**	**19**
CITYWIDE TOTAL[1]	**334,774**	**431,629**	**29**

Source: Figures aggregated and projected by PlaceWorks, 2020. Methodology included in Appendix B-b, *Santa Ana Buildout Methodology,* of this Draft PEIR.
[1] Total population includes all individuals living in households, institutional group quarters, and noninstitutional group quarters.

Table 3-8 Existing Conditions, Potential Growth, and Buildout Conditions: Housing Units, Nonresidential Square Footage, and Jobs

	EXISTING[1]			GROWTH[2]			BUILDOUT		
PLANNING AREA	Housing Units	Bldg. Sq. Ft.[3]	Jobs	Housing Units	Bldg. Sq. Ft.[3]	Jobs	Housing Units	Bldg. Sq. Ft.[3]	Jobs
FOCUS AREAS	**6,380**	**13,421,155**	**28,428**	**17,575**	**2,263,130**	**6,616**	**23,955**	**15,684,285**	**35,044**
55 Freeway/Dyer Road	1,221	5,666,453	8,898	8,731	475,830	4,404	9,952	6,142,283	13,302
Grand Avenue/17th Street	561	1,400,741	3,568	1,722	-696,847	-1,946	2,283	703,894	1,622
South Bristol Street	220	1,577,511	3,337	5,272	3,505,130	7,855	5,492	5,082,641	11,192
South Main Street	1,720	1,685,978	3,455	588	-739,316	-1,304	2,308	946,662	2,151
West Santa Ana Boulevard	2,658	3,090,472	9,170	1,262	-281,667	-2,393	3,920	2,808,805	6,777
SPECIFIC PLAN / SPECIAL ZONING	**4,685**	**13,924,891**	**38,548**	**15,839**	**3,033,554**	**1,154**	**20,524**	**16,958,445**	**39,702**
Adaptive Reuse Project Incentive Area[4]	260	976,935	3,043	1,000	0	-476	1,260	976,935	2,567
Bristol Street Corridor Specific Plan	136	140,348	294	-1	2,791	-12	135	143,139	282
Harbor Mixed Use Transit Corridor Specific Plan	1,324	1,767,937	3,286	3,298	200,045	-1,708	4,622	1,967,982	1,578
MainPlace Specific Plan	0	1,108,080	2,216	1,900	1,318,843	3,164	1,900	2,426,923	5,380
Metro East Mixed-Use Overlay Zone	844	2,516,056	7,524	4,707	2,169,891	4,734	5,551	4,685,947	12,258
Midtown Specific Plan	607	1,885,065	4,824	0	-66,812	-209	607	1,818,253	4,615
Transit Zoning Code	1,514	5,530,470	17,361	4,935	-591,204	-4,339	6,449	4,939,266	13,022
ALL OTHER AREAS OF THE CITY[5]	**67,727**	**39,772,550**	**92,004**	**2,847**	**552,536**	**3,666**	**70,574**	**40,325,086**	**95,670**
CITYWIDE TOTAL	**78,792**	**67,118,596**	**158,980**	**36,261**	**5,849,220**	**11,436**	**115,053**	**72,967,816**	**170,416**

3. Project Description

Table 3-8 Existing Conditions, Potential Growth, and Buildout Conditions: Housing Units, Nonresidential Square Footage, and Jobs

	EXISTING[1]			GROWTH[2]			BUILDOUT		
PLANNING AREA	Housing Units	Bldg. Sq. Ft.[3]	Jobs	Housing Units	Bldg. Sq. Ft.[3]	Jobs	Housing Units	Bldg. Sq. Ft.[3]	Jobs

Source: Figures aggregated and projected by PlaceWorks, 2020. Methodology included in Appendix B-b, *Santa Ana Buildout Methodology,* of this Draft PEIR.

1 Existing represents conditions as of December 2019 as derived from the City of Santa Ana Planning Information Network and projects already under construction per the January 2020 monthly development project report.

2 The potential growth for new development in specific plan / special zoning areas is based on the forecast buildout at the time of the respective zoning document's adoption, minus the amount of new development built between its adoption date and 2019.

3 Only includes nonresidential building square footage.

4 The figures shown on the row for the Adaptive Reuse Project Incentive Area represent parcels that are exclusively in the Adaptive Reuse Project Incentive Area boundary. Figures for parcels that are within the boundaries of both the Adaptive Reuse Project Incentive Area and a specific plan, other special zoning, or focus area boundary are accounted for in the respective specific plan, other special zoning, or focus area.

5 The City has included an assumption for growth on a small portion (5 percent) of residential parcels through the construction of second units, which is distributed throughout the City and is not concentrated in a subset of neighborhoods. Additional growth includes known projects in the pipeline; an increase of 10 percent in building square footage and employment for the professional office surrounding the Orange County Global Medical Center and along Broadway north of the Midtown Specific Plan; and the commercial and retail along 1st Street south of the West Santa Ana Boulevard focus area.

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Table 3-9 Existing and Buildout Dwelling Unit Breakdown

	Existing Dwelling Units	GPU Buildout Dwelling Units	Change
Single Family Units	56,782	56,192	(590)
Multifamily Units[1]	22,010	58,861	36,581
TOTAL UNIT	**78,792**	**115,053**	**36,261**

Source: Figures aggregated and projected by PlaceWorks, 2020.
[1]Multi-family homes include townhomes, garden apartments, and mixed use units.

3.4 INTENDED USES OF THE EIR

This is a Program EIR (PEIR) that examines the potential environmental impacts of the proposed General Plan update. This Draft PEIR is also being prepared to address various actions by the City and others to adopt and implement the General Plan update. It is the intent of the Draft PEIR to enable the City of Santa Ana, other responsible agencies, and interested parties to evaluate the environmental impacts of the GPU, thereby enabling them to make informed decisions with respect to the requested entitlements. The anticipated approvals required for this project and related uses of this PEIR project are:

Lead Agency	Action
City of Santa Ana Council	• Adoption of the Santa Ana General Plan update • Certification of PEIR • Adoption of Findings of Fact and Statement of Overriding Considerations (if required) • Adoption of the Mitigation Monitoring Program • Adoption of any ordinances, guidelines, programs, actions, or other mechanisms that implement the Santa Ana General Plan update

3.5 REFERENCES

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4. Environmental Setting

4.1 INTRODUCTION

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

4.2 REGIONAL ENVIRONMENTAL SETTING

4.2.1 Regional Location

The City of Santa Ana is in the western central portion of Orange County, approximately 30 miles southwest of the city of Los Angeles and 10 miles northeast of the city of Newport Beach (see Figure 3-1, *Regional Location*). As shown in Figure 3-2, *Citywide Aerial*, the city is bordered by the city of Orange and unincorporated areas of Orange County to the north, the city of Tustin to the east, the cities of Irvine and Costa Mesa to the south, and the cities of Fountain Valley and Garden Grove to the west. The city also includes a portion of the Santa Ana River Drainage Channel within its sphere of influence (SOI) (see Figure 3-3, *17th Street Island and Sphere of Influence*). The city and its SOI are defined in this draft program environmental impact report and referred to as the "plan area."

4.2.2 Regional Planning Considerations

4.2.2.1 SOUTH COAST AIR BASIN AIR QUALITY MANAGEMENT PLAN

Santa Ana is in the South Coast Air Basin (SoCAB), which is managed by the South Coast Air Quality Management District (AQMD). The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. Air pollutants for which ambient air quality standards (AAQS) have been developed are known as criteria air pollutants and include ozone (O_3), carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NO_x), sulfur dioxide, coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead. VOC and NO_x are criteria pollutant precursors and go on to form secondary criteria pollutants, such as O_3, through chemical and photochemical reactions in the atmosphere. Air basins are classified as attainment/nonattainment areas for particular pollutants depending on whether they meet the AAQS for that pollutant. The SoCAB is designated nonattainment for O_3, $PM_{2.5}$, and lead (Los Angeles County only) under the California and National AAQS and nonattainment for nitrogen dioxide (NO_2) and PM_{10} under the California AAQS. The General Plan update's consistency with the applicable AAQS is discussed in Section 5.2, *Air Quality*.

4.2.2.2 GREENHOUSE GAS EMISSIONS REDUCTION LEGISLATION

Current State of California guidance and goals for reductions in greenhouse gas (GHG) emissions are generally embodied in Executive Order S-03-05; Executive Order B-30-15; Executive Order B-55-18; Assembly Bill 32 (AB 32), the Global Warming Solutions Act (2008); Senate Bill 32 (SB 32), updating the emission limits set in AB 32; Senate Bill 375 (SB 375), the Sustainable Communities and Climate Protection Act; and Senate Bill 100 (SB 100), the 100 Percent Clean Energy Act of 2018.

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

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

AB 32 was passed by the state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the emissions reduction targets established in Executive Order S-3-05. SB 32 was passed September 8, 2016, and set an interim target consistent with AB 32. Executive Order B-30-15 also established an interim goal of a 40 percent reduction below 1990 levels by 2030.

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

In September 2016, Governor Brown signed SB 32 and Assembly Bill 197, making the Executive Order goal for year 2030 into a statewide mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires CARB to prioritize direction emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources. CARB issued an update to its Scoping Plan, which sets forth programs for meeting the SB 32 reduction target in 2017. In 2018, Governor Brown signed Executive Order B-55-18, which sets a more ambitious goal for emission reductions than Executive Order S-3-05. Executive Order B-55-18 sets a goal for the state to achieve carbon neutrality no later than 2045 and to achieve and maintain net negative emissions thereafter. SB 100 would help the state reach the goal set by Executive Order B-55-18 by requiring that the state's electricity suppliers have a source mix that consists of at least 60 percent renewable/zero carbon sources in 2030 and 100 percent renewable/zero carbon sources in 2045.

The General Plan update's ability to meet these regional GHG emissions reduction target goals is analyzed in Section 5.7, *Greenhouse Gas Emissions*.

Senate Bill 743

The legislature found that with the adoption of the SB 375, the state had signaled its commitment to encourage land use and transportation planning decisions and investments that reduce vehicle miles traveled (VMT) and thereby contribute to the reduction of GHG emissions, as required by the California Global Warming Solutions Act of 2006 (AB 32). Additionally, AB 1358 requires local governments to plan for a balanced, multimodal transportation network that meets the needs of all users.

On September 27, 2013, SB 743 was signed into law, starting a process that fundamentally changes transportation impact analysis as part of CEQA compliance. Changes include the elimination of auto delay, level of service (LOS), and similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts under CEQA. As part of the new CEQA Guidelines, the new criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (Public Resources Code Section 21099(b)(1)).

On December 28, 2018, the State Office of Planning and Research approved a comprehensive update to the state CEQA Guidelines which also included implementation metrics for VMT. The revised CEQA Guidelines established new criteria for determining the significance of transportation impacts and define alternative metrics to replace LOS. The new guidelines require that LOS be replaced with VMT-related metric(s) to evaluate the significance of transportation-related impacts under CEQA for development projects, land use plans, and transportation infrastructure projects beginning on January 1, 2020. On June 18, 2019, the Santa Ana City Council adopted VMT thresholds of significance for transportation impact analysis under CEQA. The General Plan update information on VMT is analyzed in Section 5.16, *Transportation*.

4.2.2.3 SCAG REGIONAL TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY

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

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

The SCS outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding

goods movement). The SCS is meant to provide growth strategies that will achieve the regional GHG emissions reduction targets identified by the California Air Resources Board. However, the SCS does not require that local general plans, specific plans, or zoning be consistent with the SCS; instead, it provides incentives to governments and developers for consistency. The General Plan update's consistency with the applicable 2016-2040 RTP/SCS policies is analyzed in detail in Section 5.10, *Land Use and Planning*.

4.2.2.4 AIRPORT ENVIRONS LAND USE PLAN FOR JOHN WAYNE AIRPORT

In 1975, the Airport Land Use Commission (ALUC) of Orange County adopted an Airport Environs Land Use Plan (AELUP, amended April 17, 2008) that included John Wayne Airport (JWA); Fullerton Municipal Airport; and the Joint Forces Training Base, Los Alamitos. The AELUP is a land use compatibility plan that is intended to protect the public from adverse effects of aircraft noise, to ensure that people and facilities are not concentrated in areas susceptible to aircraft accidents, and to ensure that no structures or activities adversely affect navigable space. Each airport's AELUP identifies standards for development in the airport's planning area based on noise contours, accident potential zones, and building heights. ALUC is authorized under state law to assist local agencies in ensuring compatible land uses in the vicinity of airports. Primary areas of concern for ALUC are noise, safety hazards, and airport operational integrity. ALUC is not an implementing agency in the manner of local governments, nor does it issue permits for a project such as those required by local governments. However, pursuant to California Public Utilities Code Section 21676, local governments are required to submit all general plan amendments and zone changes that occur in the ALUC planning areas for consistency review by ALUC. If such an amendment or change is deemed inconsistent with the ALUC plan, a local government may override the ALUC decision by a two-thirds vote of its governing body if it makes specific findings that the proposed action is consistent with the purposes stated in Section 21670(a)(2) of the Public Utilities Code: "to protect public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards in areas around public airports to the extent that these areas are not already devoted to incompatible uses." A large portion of Santa Ana falls within the airport influence area of JWA. Therefore, the General Plan update's consistency with JWA's AELUP is discussed in Sections 5.8, *Hazards and Hazardous Materials*, 5.10, *Land Use and Planning*, and 5.12, *Noise*.

4.3 LOCAL ENVIRONMENTAL SETTING

4.3.1 Location and Land Use

4.3.1.1 LOCATION

At the local level, the plan area is generally bounded by State Route 22 on the north, State Route 55 on the east, and Interstate 405 on the south (see Figure 3-2, *Citywide Aerial*). The Santa Ana River runs northeast to southwest through the western part of the city. The current General Plan does not include the 17th Street Island SOI.

4.3.1.2 EXISTING LAND USES

The plan area encompasses approximately 14,329 acres (22.4 square miles). As shown in Figure 3-4, *Existing Land Uses*, the plan area comprises a number of existing land uses, with low density residential, commercial, and industrial making up the majority. Commercial and industrial uses are primarily found along SR-55, which is a

major corridor, and in the southwest corner of the city. Table 3-1, *Existing Land Use Designations and Statistics*, provides a statistical summary of the existing land uses within the plan area.

City Boundaries

The majority of the city is urbanized, with residential and nonresidential development, and mobility and public facilities all contributing to Santa Ana's existing built environment. The city's incorporated boundaries encompass approximately 27.4 square miles. Residential land uses occupy almost 40 percent of the land within the current city boundaries, accounting for 5,226 acres.[1] Other predominant land uses include commercial (1,588 acres) and industrial (1,628 acres).

Sphere of Influence

The City annexed the 17th Street Island area in November 2019 (see Figure 3-3). This area was previously a part of the city's SOI. The city's current SOI includes a two-mile portion of the Santa Ana River Drainage Channel along its westerly border with Fountain Valley (see Figure 3-3).

Focus Areas

The City identified five focus areas suited for new growth and development under the GPU: South Main Street, Grand Avenue and 17th Street, West Santa Ana Boulevard, 55 Freeway and Dyer Road, and South Bristol Street. These five areas are along major travel corridors, the future OC Streetcar line, and/or linked to the city's downtown area.

South Main Street Focus Area

The South Main Street focus area follows a 2.3-mile segment of Main Street north from the Union Pacific Railroad tracks up to 1st Street and the edge of Downtown Santa Ana. The focus area includes properties east to Orange Avenue and west to Broadway. Throughout its length, the Main Street corridor has a consistent pattern of retail and service commercial fronting the right-of-way, with lower density residential neighborhoods filling in behind to the east and west boundaries. In the southwest corner, a row of warehouses constitutes the only current industrial uses in the focus area. The focus area also has four public schools—Manuel Esqueda Elementary School, Cesar E. Chavez High School, Lathrop Intermediate School, and Benjamin Franklin Elementary School.

Grand Avenue and 17th Street Focus Area

The Grand Avenue and 17th Street focus area is centered around the intersection of 17th Street and Grand Avenue in northeast Santa Ana. Encompassing approximately 172 acres, the focus area extends north along Grand Avenue to State Route 22 and south to 2nd Street. The area is currently primarily business oriented, with offices and commercial storefronts occupying more than 125 acres. A number of large apartment complexes also line the Grand Avenue corridor, constituting roughly one-fifth of the focus area. The United States Postal Service North Grand office and Edison substation, near the corners of Grand and Santa Clara Avenue, account for the remaining acreage.

[1] This number does not include Live/Work and Mixed Use land uses.

West Santa Ana Boulevard Focus Area

The West Santa Ana Boulevard focus area encompasses more than 480 acres and is 2.7 miles long. The focus area is bounded by 5th Street/Orange County Transit Authority (OCTA) easement to the north, 1st Street to the south, Ross Street to the east, and Figueroa Street to the west. The area is primarily a mix of residential (174 acres), commercial (43 acres), and a variety of industrial (85 acres) uses, with large county and federal government complexes on the east end leading to the Downtown/Civic Center. Willowick Golf Course is also within the focus area and occupies approximately 134 acres adjacent to the Santa Ana River Channel.

55 Freeway and Dyer Road Focus Area

The 55 Freeway and Dyer Road focus area constitutes a significant portion (355 acres) of commercial and industrial activity on the eastern edge of Santa Ana. The area's boundaries extend north to Warner Avenue, south to Alton Parkway, west beyond Tech Center Drive, and east to Red Hill Avenue. Office parks and a variety of industrial facilities make up the majority of the focus area (253 acres), with hotels and other service-oriented commercial uses concentrated around the freeway (94 acres). The City recently approved the development of a large apartment complex (currently under construction) near the intersection of Dyer Road and Red Hill Avenue that will introduce residential uses to the area for the first time. The focus area also sits adjacent to the Tustin Legacy redevelopment in Tustin and Irvine Business Complex (IBC).

South Bristol Street Focus Area

The South Bristol Street focus area sits on the southern border of Santa Ana, directly adjacent to South Coast Plaza in Costa Mesa. Extending from Warner Avenue to Sunflower Avenue, the 1.5-mile-long corridor is currently almost entirely commercial focused, with more than 180 acres occupied by a variety of retail and service businesses. Commercial uses tend to be less intense north of Alton Avenue and gradually intensify toward South Coast Plaza. Although residential uses make up less than 10 percent of the focus area, the corridor is surrounded by neighborhoods on its east and west sides, with lower density neighborhoods in the north and more intense multifamily neighborhoods in the south.

Existing Surrounding Land Uses

The plan area is surrounded by developed urban areas, as shown in Figure 3-2, *Citywide Aerial*. It is bordered by residential, institutional (schools), and commercial uses to the north; residential, institutional (schools), industrial, and commercial uses to the east; residential and commercial uses to the south; and residential, commercial, and open space uses to the west. John Wayne Airport is to the southeast.

4.3.2 Environmental Resources and Infrastructure

4.3.2.1 AGRICULTURAL RESOURCES

As shown in Figure 3-4, *Existing Land Uses*, the plan area has no agricultural resources areas. According to the California Resource Agency's Department of Conservation the city does not have any significant agricultural resources (see Figure 8-1, *City of Santa Ana Agricultural Resources*). Because there are no agricultural resources

within the plan area, the potential impacts of the General Plan update on agricultural resources are analyzed in Chapter 8, *Impacts Found Not to Be Significant*.

4.3.2.2 BIOLOGICAL RESOURCES

Santa Ana is largely urbanized, but a few areas in the city have not been impacted by urbanization. The majority of the remaining open space areas have been set aside for parkland, flood control, or other types of utility easements. Most of this open space has undergone significant modification and no longer reflects the native habitats that existed in the area prior to European contact and subsequent settlement. Santiago Creek is not channelized, and some undisturbed habitats remain along this channel.

Plant life in Santa Ana is limited to nonnative, introduced, exotic, and ornamental species that are used for landscaping. Common trees in the city include shade trees, such as Peruvian pepper tree and Brazilian pepper. Grass associated with the City parks is primarily Kentucky bluegrass. Riparian habitat associated with Santiago Creek consists of willow species, mulefat, Fremont's cottonwood, elderberry, and western sycamore. Portions of the riparian community consist of white alder, tree tobacco, castor bean, and eucalyptus trees. Coast live oak trees are found adjacent to Santiago Creek in the northeastern portion of the city.

Animal life in the City include sparrows, starlings, doves, blackbirds, crows, lizards, snails, rats, opossums, insects, and other urban species. A number of common rodent species are likely to be found in the area and include the black rat, Norway rat, deer mouse, and house mouse. Common species of birds in the plan area include the starling, spotted dove, house sparrow, Brewer's blackbird, American crow, and house finch.

The potential impacts of the General Plan update on biological resources are analyzed in Section 5.3, *Biological Resources*.

4.3.2.3 CULTURAL RESOURCES

Originally inhabited by indigenous Tongva tribes, the land that is now within the boundaries of Santa Ana fell under the jurisdiction of Mission San Juan Capistrano during the Mission Period under Spanish rule (1769–1821). The first European exploration of the area that would become Orange County began in 1769 when the Gaspar de Portola expedition passed through on its way from Mexico to Monterey. In 1776, Mission San Juan Capistrano was founded.

The surficial geology of Santa Ana is composed of alluvial sediments that range in age from the Holocene to early Pleistocene. Pleistocene sediments have a rich fossil history in southern California. The most common Pleistocene terrestrial mammal fossils include mammoth, horse, bison, camel, and small mammals, but other taxa have been reported, including lion, cheetah, wolf, antelope, peccary, mastodon, capybara, and giant ground sloth as well as birds, amphibians, and reptiles such as frogs, salamanders, snakes, and turtles. In addition to illuminating the striking differences between southern California in the Pleistocene and today, this abundant fossil record has been vital in studies of extinction, ecology, and climate change.

Santa Ana has notable historic resources. Residential historic resources are mainly concentrated in early residential neighborhoods such as the French Park Historic District, Heninger Park Historic District, Floral Park, and Wilshire Square, various Historically Sensitive Neighborhoods, and surrounding the Downtown Santa Ana

Historic District. Historic commercial resources are concentrated in the Downtown Santa Ana Historic District (refer to Figures 5.4-1 and 5.4-2). Notable institutional resources include the Spurgeon Building, the Orange County Savings and Trust building, the Methodist Episcopal Church South, the Old Orange County Courthouse, the Old City Hall, and the Chamber of Commerce building. Furthermore, notable agricultural and industrial resources include the Maag Ranch and Maag Ranch House as well as the Pacific Electric Railway Depot, the Pacific Electric Sub-station No. 14, and the Southern Counties Gas Company (Chattel 2019).

Refer to Section 5.4, *Cultural Resources*, for additional information regarding archaeological and historical resources in the city and an analysis of General Plan update impacts on these cultural resources. Paleontological resources are discussed in Section 5.6, *Geology and Soils*.

4.3.2.4 CLIMATE AND AIR QUALITY

As noted in Section 4.2.2.1, the plan area is in the SoCAB, which is designated nonattainment for O_3, $PM_{2.5}$, and lead (Los Angeles County only) under the California and National AAQS and nonattainment for NO_2 and PM_{10} under the California AAQS.

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

An air quality analysis was performed for the General Plan update, and the results are discussed in Section 5.2, *Air Quality*. Additionally, General Plan update–related impacts from GHG emissions are discussed in Section 5.7, *Greenhouse Gas Emissions*.

4.3.2.5 GEOLOGY AND LANDFORM

Santa Ana is on the southern portion of the Downey Plain—a broad alluvial plain that covers the northwestern portion of Orange County (Yerkes et al. 1965)—and situated within the Peninsular Ranges Geomorphic Province. This geomorphic province encompasses an area that extends approximately 900 miles from the Transverse Ranges and the Los Angeles Basin to the southern tip of Baja California.

The Santa Ana Mountains rise to 5,700 feet above sea level to the northeast and east of the city, and the San Joaquin Hills are to the southeast. The Santa Ana River flows through the western part of the city on its way to the Pacific Ocean to the southwest. Santa Ana is generally flat with a gentle slope toward the southwest (USGS 2015a, 2015b, 2015c, 2015d).

The Peninsular Ranges Geomorphic Province is traversed by a group of subparallel fault zones trending roughly northwest. Major active fault systems—San Andreas, San Jacinto, Whittier-Elsinore, and Newport-Inglewood

fault zones—form a regional tectonic framework consisting primarily of right-lateral, strike-slip movement (Jennings and Bryant 2010). Santa Ana is situated between two major active fault zones—the Whittier-Elsinore Fault Zone to the northeast and the Newport-Inglewood Fault to the southwest. Other potentially active faults near the city include the Elysian Park blind thrust, Chino-Central Avenue, San Joaquin Hills blind thrust, San Jose, Cucamonga, Sierra Madre, and Palos Verdes faults (CGS 2019; Cao et al. 2003).

Refer to Section 5.6, *Geology and Soils*, for additional information concerning the plan area's existing geological conditions and an analysis of General Plan update impacts on geology and soils and paleontological resources.

4.3.2.6 HYDROLOGY

Regional Drainage

The plan area spans three separate watersheds, each of which serve the plan area as well as surrounding areas. The northwestern portion of the plan area drains to the Anaheim Bay–Huntington Harbor Watershed, the northern and southwestern portions drain to the Santa Ana River Watershed, and the southeastern and eastern portions of the plan area drain to the Newport Bay Watershed.

Local Surface Waters and Drainage

Storm drain lines throughout the plan area include both City and Orange County Flood Control District (OCFCD) drainage facilities to convey stormwater runoff. All underground lines are under jurisdiction of the City, and all the open flood control channels are maintained by OCFCD. One open trapezoidal channel than runs west from Harbor Boulevard to south of 1st Street is owned and maintained by the City. The City storm drain infrastructure feeds to a series of OCFCD regional drainage channels.

Groundwater

The Orange County (OC) Basin underlies the northern half of Orange County beneath broad lowlands. The OC Basin is managed by the Orange County Water District (OCWD), covers an area of approximately 350 square miles, and has a full volume of approximately 66 million acre-feet. The basin has been operated within its sustainable yield for more than 10 years without degrading water quality, reducing storage, or lowering groundwater levels.

Groundwater Quality

OCWD is responsible for managing the OC Basin. To maintain groundwater quality, OCWD has an extensive monitoring program to manage the OC Basin's groundwater production, control groundwater contamination, and comply with all required laws and regulations. Salinity is a significant water quality problem in many parts of southern California, including Orange County. Salinity is a measure of the dissolved minerals in water, including both total dissolved solids and nitrates. The concentration of total dissolved solids in the OC Basin is expected to decrease over time due to the groundwater replenishment system operated by OCWD, the Municipal Water District of Orange County, and the Metropolitan Water District of Southern California.

Flood Hazards

Parts of the plan area are within 100-year flood zones designated by the Federal Emergency Management Agency. Additionally, much of the central and western parts of the plan area are in the dam inundation area for Prado, Santiago Creek, and Villa Park dams. Small parts of the northern portion of the plan area, north of Fairhaven Memorial Park, are in the dam inundation area for Santiago Creek and Villa Park dams.

Section 5.9, *Hydrology and Water Quality*, analyzes the General Plan update's impacts on storm drainage, water quality, flooding, and groundwater. Water resources are also discussed in Section 5.18, *Utilities and Service Systems*.

4.3.2.7 NOISE

The plan area is impacted by a multitude of existing noise sources, and the noise environment is variable depending on location. However, freeway, rail, and local roadway traffic noise tend to dominate the noise environment. Major mobile sources include vehicular and truck traffic along major corridors such as the Garden Grove Freeway (SR-22), the Orange Freeway (SR-57), the Santa Ana Freeway (1-5), the Costa Mesa Freeway (SR-55), and the San Diego Freeway (l-405). Air traffic from the nearby John Wayne Airport contributes to the noise environment in the plan area.

Refer to Section 5.12, *Noise*, for further information concerning existing noise conditions in the plan area and an analysis of the General Plan update's impacts on the local and regional noise environment.

4.3.2.8 SCENIC FEATURES

Santa Ana does not have County-designated scenic highways, but the scenic corridors element of the existing General Plan has identified scenic corridors that serve as major view and vantage points. These scenic corridors include:

- Primary street corridors that are significant transportation and activity corridors in the city and are accessible from all freeways. They include the 1st/4th Street, Main Street/Broadway, and MacArthur Boulevard corridors.
- Secondary street corridors link neighborhoods, district centers, and mixed-use corridors. They include 17th Street, Edinger Avenue, and Bristol Street.
- Intercity corridors are major image makers for the city. They include Harbor Boulevard and Fairview Street.
- High-speed scenic corridors that operate at a regional scale to influence the city's image. They include the Newport, Santa Ana, and Garden Grove freeways.
- Watercourse corridors operate at a regional scale and are part of the county's open space network. They include the Santa Ana River and Santiago Creek.

These corridors provide views of Santa Ana and largely influence the public's aesthetic and visual experience of the city. Furthermore, Santa Ana's downtown area (generally bound by Washington Place to the north, Bristol

Street to the west1st Street to the south, and Bristol Street to the west) contains many of the oldest buildings in the city, including a number of national, state, and county historical landmarks.

Section 5.1, *Aesthetics*, further discusses the scenic vistas and community character of the plan area and the General Plan update's potential to impact visual resources in the plan area.

4.3.2.9 PUBLIC SERVICES AND UTILITIES

The plan area is in an urbanized area with existing public services and utilities.

Public Services

Police protection is provided by the Santa Ana Police Department, which currently has six facilities throughout the city. Fire protection services are provided by the Orange County Fire Authority, a regional fire service agency that serves several cities in Orange County as well as all unincorporated areas. The OCFA Operations Division 6 serves Santa Ana (OCFA 2019).

The Santa Ana Unified School District, Garden Grove Unified School District, Tustin Unified School District, and Orange Unified School District provide service to the city. Additionally, there are a number of private and charter schools throughout the city.

Residents of the city are served by two libraries and four community centers. The Main Library is in downtown Santa Ana. Residents also have access to the Newhope Library Learning Center, Garfield Community Center, Roosevelt-Walker Community Center, Jerome Community Center, and the Delhi Center (Santa Ana 2019).

Utilities and Service Systems

The plan area obtains water from two primary sources: local groundwater from the OC Basin, which is managed by the OCWD, and imported water from Metropolitan Water District of Southern California. The city also receives recycled water from OCWD. Overall, the city has documented that it is 100 percent reliable for a normal year, a single dry year, and multiple dry-year events from 2020 through 2040 (Santa Ana 2016).

The City's water utility provides water service within a 27-square-mile service area. The service area includes the City of Santa Ana and a small neighborhood in Orange near Tustin Avenue and Fairhaven, by the northeast corner of Santa Ana. Irvine Ranch Water District (IRWD) water lines also serve portions of the city. IRWD operates the Dyer Road Well Field located in the City of Santa Ana, which is connected to IRWD's potable distribution system.

The City operates and maintains the sewer system, which serves the entire plan area as well as portions of Garden Grove and Orange. The city's sewer collection system consists of approximately 450 miles of sewer mains, including approximately 60 miles of Orange County Sanitary District (OCSD) regional trunk facilities. The system operates largely by gravity and discharges at several locations into OCSD gravity trunk sewers for conveyance to OCSD Treatment Plant #1. The plant has a capacity of about 76 million gallons per day.

Waste Management of Orange County provides residential, commercial, and industrial trash collection; recycling services; and dumpster rentals. Residential and commercial solid waste is primarily transported to the Frank R. Bowerman, Olinda Alpha, Chiquita Canyon, and Azusa Land Reclamation sanitary landfills.

Electric power is provided by Southern California Edison. Natural gas is provided by the Southern California Gas Company. Internet, phone, and satellite TV services are currently provided by a variety of private companies, including AT&T, Spectrum, Windstream, and Mediacom.

The General Plan update's impacts on the provision of public services are analyzed in Section 5.14, *Public Services*, and impacts to utilities and service systems are analyzed in Section 5.18, *Utilities and Service Systems*.

4.3.2.10 TRANSPORTATION, TRAFFIC, AND CIRCULATION

Regional and Local Circulation

Regional circulation to and through the plan area is provided by Interstate 5 (I-5) passing southeast-northwest through the plan area, State Route 55 (SR-55) along the city's eastern border, and SR-22 along the city's northern border (see Figure 3-1, *Regional Location*). As shown in Figure 3-1, other major highways in the region and in close proximity include I-405, which runs east-west to the city's south; SR-57, which runs north-south to the city's north; and SR-73, which runs southeast-northwest to the city's south. The circulation network serving the plan area is essentially a grid system of arterials generally oriented north-south and east-west. South Bristol Street, Fairview Street, South Main Street, and Grand Avenue are continuous arterials that span the entire length of the plan area south to north. 1st Street, 17th Street, Edinger Avenue, Warner Avenue, and MacArthur Boulevard span the city east to west. The plan area's arterial system links local roadways, extending local access to Costa Mesa, Irvine, Tustin, Fountain Valley, Garden Grove, and Orange. The arterials also link to SR-55, I-5, and SR-22 (see Figure 5.16-1, *Current Master Plan of Streets and Highways*).

Goods Movements

The interstate freeway system and California highways across and near Santa Ana provide routes for the movement of goods. These include I-5, SR-22, SR-55, SR-57, and I-405. Access to freeways is restricted to interchange ramps. Under the authority of Caltrans, these freeways and associated ramps are part of a statewide and national network of truck routes that carry a vast amount of goods through California.

Public Transit

OCTA is the leading transit provider in Orange County, offering a wide range of fixed-route bus service. OCTA has developed an extensive network of transit routes to connect residents and commuters of Santa Ana to key destinations (see Figure 5.16-2, *Current Transit Network)*. The Southern California Regional Rail Authority also provides commuter and passenger rail service to Santa Ana. The Metrolink Orange County Line and the Inland Empire-Orange County commuter lines travel through Santa Ana, with scheduled stops at the Santa Ana Regional Transportation Center. Amtrak's Pacific Surfliner also provides passenger rail service through Santa Ana, connecting to communities throughout the Los Angeles and San Diego metropolitan regions.

Santa Ana is working with Garden Grove and OCTA to build a fixed guideway system called the OC Streetcar. Expected to begin operations in 2021, the OC Streetcar will link the Santa Ana Regional Transportation Center to a new multimodal hub at Harbor Boulevard/Westminster Avenue in Garden Grove.

Pedestrian and Bicycle Circulation/Trails

Santa Ana's pedestrian system consists of pathways, sidewalks, and crossings. Existing pedestrian pathways include the Santa Ana River Trail. Sidewalks are provided on both sides of streets throughout most of the city. Pedestrian crossings are provided at most intersections, with a variety of crossing treatments. These treatments include parallel-striped crosswalks at signals, countdown signals, pedestrian-activated signals with audio/visual warnings, bulb-outs, and median refuges that reduce crossing distances.

Santa Ana's bikeway network includes four types of classifications. Class 1 bicycle paths are paved rights-of-way for the exclusive use of bicyclists and pedestrians. Class 1 bike paths include the Santa Ana River Trail and several segments of Alton Avenue/Maple Street, Santiago Creek Trail, Flower Street, Santa Ana Gardens Channel/Bear Street, and MacArthur Boulevard. Class 2 bicycle lanes are one-way routes denoted by a striped lane on a roadway to delineate the rights-of-way assigned to vehicles and bikes. Existing Class 2 bike lanes in Santa Ana are provided along Bristol Street, Greenville Street, Memory Lane, and Ross Street. Class 3 bicycle routes are bikeways where cyclists share the travel lane with motor vehicles. Although not always designated by signage, most streets in low-traffic-volume residential neighborhoods are classified Class 3 routes. Class 4 bicycle cycle tracks are local roads that have been enhanced with treatments that prioritize bicycle travel. Bristol Street has a Class 4 cycle track under construction. Figure 5.16-3, Current Bikeway Network, shows the current bikeways in Santa Ana.

Air Travel

As shown in Figure 3-2, *Citywide Aerial,* the John Wayne Airport is outside of the city's southeast boundary. JWA is an international, commercial-service airport owned and operated by the County of Orange. The service area includes more than three million people in 34 cities and unincorporated areas of Orange County. In 2018, there were 204,561 civil take-offs or landings and 706 military take-offs or landings, for a total of 205,267 take-offs or landings (FAA 2019).

A detailed discussion of the existing traffic conditions and the General Plan update's impacts on the transportation and circulation system is provided in Section 5.16, *Transportation and Traffic*.

4.4 LOCAL PLANNING CONSIDERATIONS

4.4.1 General Plan

The current General Plan for the City of Santa Ana consists of 16 elements adopted in separate years—from 1982 to 2014:

- Airport Environs Element (adopted February 11, 2009)
- Circulation Element (adopted February 2, 1998)
- Conservation Element (adopted September 20, 1982)

- Economic Development Element (adopted July 6, 1998)
- Education Element (adopted January 19, 1988)
- Energy Element (adopted September 20, 1982)
- Growth Management Element (adopted July 1, 1991)
- Housing Element (adopted February, 2014)
- Land Use Element (adopted February 2, 1998)
- Noise Element (adopted September 20, 1982)
- Open Space, Parks and Recreation Element (adopted September 20, 1982)
- Public Facilities Element (adopted September 20, 1982)
- Public Safety Element (adopted September 20, 1982)
- Scenic Corridors Element (adopted September 20, 1982)
- Seismic Safety Element (adopted September 20, 1982)
- Urban Design Element (adopted July 6, 1998)

Figure 3-6, *Current General Plan Land Use Plan,* shows the existing land use designations of the current General Plan. Table 3-2, *Current General Plan Land Use Designations and Statistics*, presents a breakdown of current General Plan land use designations. As shown in Figure 3-6 and Table 3-2, 11 land use designations currently regulate development in the city. The largest land use designation within the city boundaries are Low Density Residential and Industrial.

The GPU is an update to the existing General Plan. Each of the elements presents an overview of its scope, summary of conditions, and planning issues goals and policies. The goals and policies are applicable to all lands within the City of Santa Ana. In addition to the general goals and policies that apply to all lands, Santa Ana has distinct planning subareas that have custom goals and policies that ensure the preservation and enhancement of these special districts. As shown in Figure 3-11, *Focus Areas and Special Planning Areas,* these areas are:

- Adaptive Reuse Project Incentive Area
- Bristol Street Corridor Specific Plan
- Harbor Mixed Use Transit Corridor Specific Plan
- Midtown Specific Plan
- MainPlace Specific Plan
- Metro East Mixed-Use Overlay Zone
- Transit Zoning Code Specific Development

4.4.2 Zoning

The zoning designations of the areas within the city's incorporated boundaries (see Figure 3-2, *Citywide Aerial*) are defined by the City's zoning map. The zoning map contains the various zoning designations throughout the city, including residential, commercial, industrial, professional, open space, and the specific plan areas mentioned above (Santa Ana 2017). Chapter 41 (Zoning) of the Santa Ana Municipal Code provides the basis for current zoning in the city that carries out the policies of the existing General Plan.

4.5 ASSUMPTIONS REGARDING CUMULATIVE IMPACTS

Section 15355 of the CEQA Guidelines defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Cumulative impacts are the change caused by the incremental impact of an individual project compounded with the incremental impacts from closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor, but collectively significant projects taking place over a period of time.

Section 15130 of the CEQA Guidelines states that cumulative impacts shall be discussed when the project's incremental effect is considerable. It further states that this discussion of cumulative impacts shall reflect the severity of the impacts and the likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The CEQA Guidelines (Section 15130 [b][1]) state that the information utilized in an analysis of cumulative impacts should come from one of two sources:

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

2) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.

The cumulative impacts analyses in this program environmental impact report (PEIR) use method No. 2. The GPU consists of a comprehensive update to the Santa Ana General Plan. Consistent with Section 15130(b)(1)(B) of the CEQA Guidelines, this Draft PEIR analyzes the environmental impacts of developments in accordance with buildout of the proposed land use plan. As a result, this Draft PEIR addresses the cumulative impacts of development within the plan area, which includes the city (incorporated area) and its SOI (see Figure 3-2, *Citywide Aerial*) and the greater Orange County area surrounding it, as appropriate. In most cases, the potential for cumulative impacts is contiguous with the City boundary. Potential cumulative impacts that have the potential for impacts beyond the City boundary (e.g., traffic, air quality, noise) have been addressed through cumulative growth in the City and region. Regional growth outside Santa Ana has accounted for traffic, air quality, and noise impacts through use of the Orange County Transportation Authority Model (OCTAM), which is a model that uses regional growth projections to calculate future traffic volumes. The growth projections adopted by the City and surrounding area are used for the cumulative impact analyses of this Draft PEIR. Please refer to Chapter 5, *Environmental Analysis*, of this Draft PEIR for a discussion of the cumulative impacts associated with development and growth in the City and region. A summary of the extent of cumulative impacts is also identified below:

- Aesthetics: Contiguous with the City and SOI boundary.
- Agricultural and Forestry Resources: Contiguous with the City and SOI boundary.
- Air Quality: Based on the regional boundaries of the South Coast Air Basin.

- Biological Resources: Contiguous with the City and SOI boundary.
- Cultural Resources: Contiguous with the City and SOI boundary.
- Energy: Based on energy use in the City and SOI boundary.
- Geological Resources: Contiguous with the City and SOI boundary.
- Greenhouse Gas Emissions: Based on the sectors in the Scoping Plan emissions in California (boundary).
- Hazards and Hazardous Materials: Contiguous with the City and SOI boundary.
- Hydrology and Water Quality: Hydrology and water quality impacts would be contiguous with the Anaheim Bay–Huntington Harbor, Santa Ana River, and Newport Bay Watersheds and the Orange County Groundwater Basin Groundwater Basin, and flood impacts would be contiguous with the City and SOI boundary.
- Land Use and Planning: Contiguous with the City and SOI boundary but considers regional land use planning based on SCAG and OCTA.
- Mineral Resources: Contiguous with the City and SOI boundary.
- Noise: Contiguous with the City and SOI boundary.
- Population and Housing: Contiguous with the City and SOI boundary.
- Public Services: Contiguous with the service area boundaries of the Orange County Fire Authority; Santa Ana Police Department; Santa Ana Unified School District, Tustin Unified School District; Garden Grove Unified School District; Orange Unified School District; and the Santa Ana Public Library System.
- Recreation: Contiguous with the City and SOI boundary.
- Transportation: Considers regional transportation improvements identified in OCTAM.SCAG.
- Tribal Cultural Resources: Contiguous with the City and SOI boundary.
- Utilities and Service Systems: Water supply and distribution systems impacts would be contiguous with the service areas of the City, Orange County Water District, and Metropolitan Water District of Southern California; wastewater conveyance and treatment would be contiguous with the service areas of the City and the Orange County Sanitary District; storm drainage systems would be contiguous with the City and Orange County Flood Control District service areas; solid waste collection and disposal services would be contiguous with the Waste Management of Orange County service area; natural gas and electricity services would be contiguous with the Southern California Gas Company and Southern California Edison service areas, respectively.

- Wildfire: Contiguous with the service area boundaries of the Orange County Fire Authority and CAL FIRE.

Potential cumulative impacts related to traffic, air quality, and noise, which have the potential for impacts beyond the plan area, have been addressed through use of the Orange County Traffic Analysis Model (OCTAM), which was developed consistent with and based on the Orange County Council of Government's Regional Transportation Plan to forecast cumulative growth within the plan area and regionally. Regional growth outside of the plan area has accounted for traffic, air quality, and noise impacts through use of the OCTAM, which is a socioeconomic traffic model that uses regional growth projections to calculate future traffic volumes. The growth projections adopted by the City and surrounding area are used for the cumulative impact analyses of this Draft PEIR.

Please refer to Chapter 5, *Environmental Analysis*, for a discussion of the environmental impacts associated with cumulative development pursuant to implementation of the General Plan update.

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5. Environmental Analysis

Chapter 5 examines the environmental setting, impacts, and mitigation measures associated with the General Plan Update (proposed project). This chapter is divided into sections for respective environmental issue areas that were determined to need further study in the Draft Program Environmental Impact Report (PEIR) as part of the scoping process.

The scope of the environmental analysis was determined using the Notice of Preparation (NOP) that was published February 2020, as well as incorporating public and agency comments received concerning the NOP comment period (February 26, 2020 to March 27, 2020; see Volume II, Appendix A). Environmental issues and their corresponding sections are:

- 5.1 Aesthetics
- 5.2 Air Quality
- 5.3 Biological Resources
- 5.4 Cultural Resources
- 5.5 Energy
- 5.6 Geology and Soils
- 5.7 Greenhouse Gas Emissions
- 5.8 Hazards and Hazardous Materials
- 5.9 Hydrology and Water Quality
- 5.10 Land Use and Planning
- 5.11 Mineral Resources
- 5.12 Noise
- 5.13 Population and Housing
- 5.14 Public Services
- 5.15 Recreation
- 5.16 Transportation
- 5.17 Tribal Cultural Resources
- 5.18 Utilities and Service Systems

Sections 5.1 through 5.18 provide a detailed discussion of the environmental setting, impacts associated with the proposed project, and mitigation measures designed to reduce significant impacts where required and when feasible. The residual impacts following the implementation of any mitigation measure also are discussed.

5. Environmental Analysis

Organization of Environmental Analysis

To assist the reader in comparing information about the respective environmental issues, each section (Sections 5.1 to 5.19) is organized as follows:

- Environmental Setting
- Thresholds of Significance
- Regulatory Requirements and General Plan Policies
- Environmental Impacts
- Existing Regulations
- Level of Significance Before Mitigation
- Mitigation Measures
- Level of Significance After Mitigation
- References

In addition, the Executive Summary includes a table summarizing all the impacts by environmental issue. The approach to analysis for cumulative impacts for each topical section is summarized in Section 4.5, *Assumptions Regarding Cumulative Impacts*.

Terminology Used in This Draft PEIR

For each impact identified in this Draft PEIR, a statement of the level of significance of the impact is provided. While criteria for determining significant impacts are unique to each issue area, the environmental analysis applies a uniform classification of the impacts based on the following definitions consistent with CEQA and the CEQA Guidelines:

- A designation of *no impact* is given when no changes in the environment would occur.
- A *less than significant impact* would cause no substantial adverse change in the environment.
- A *less than significant impact with mitigation incorporated* avoids substantial adverse impacts on the environment through mitigation measures.
- A *significant unavoidable impact* would cause a substantial adverse effect on the environment, and no feasible mitigation measures would be available to reduce the impact to a less than significant level.

5.1 AESTHETICS

This section of the Draft Program Environmental Impact Report (PEIR) discusses the potential impacts to the visual character of the City of Santa Ana and its sphere of influence (plan area) associated with the General Plan Update (or GPU). This section includes a discussion of the qualitative aesthetic characteristics of the existing environment that would be potentially altered by the project's implementation and the consistency of the project with established relevant policies.

5.1.1 Environmental Setting

5.1.1.1 REGULATORY BACKGROUND

Local laws, regulations, plans, or guidelines related to aesthetics that are potentially applicable to the proposed project are summarized below.

State

California Scenic Highway Program

The California Department of Transportation's California Scenic Highway Program was created in 1963, and it maps and describes all scenic highways within the state. The program protects these state scenic highway and adjacent corridors through special conservation treatment. There are no Caltrans-designated scenic highways in Santa Ana.

California Building Energy Efficiency Standards

Title 24, Part 6 of the California Code of Regulations outlines mandatory provisions for lighting control devices and luminaires for all new developments. This code encourages buildings (both residential and nonresidential) to engage in energy-efficient development strategies.

California Government Code

Pursuant to Government Code Section 65860, zoning ordinances shall be consistent with the general plan. In the event that a zoning ordinance becomes inconsistent with a general plan by reason of amendment to the plan or to any element of the plan, the zoning ordinance shall be amended within a reasonable time so that it is consistent with the general plan as amended (Gov. Code § 65860(c)).

Local

City of Santa Ana Zoning Code

The zoning code (Chapter 41 of the municipal code) identifies land use categories, development standards, and other general provisions that ensure consistency between the General Plan and proposed development projects.

Chapter 41, Article III, regulates the location, height, bulk, and size of buildings and structures, and the size of yards and other open spaces for each of the zoning districts. The city has two height districts, each with its own

structure height standards. Unless otherwise designated on the appropriate sectional district map, all land within or subsequently annexed or incorporated into the city is declared in height district I. Santa Ana Municipal Code Section 41-602 discusses height districts I and II. Height district I is subject to the heights specified for each zoning designation. Height district II is an additional designation where development may exceed 35 feet. Both height districts provide provisions where a height of 35 feet may be exceeded when certain conditions are met.

Specific Development

Per Chapter 41, Article III, Division 26 of the municipal code, specific developments (SD) provide classification and development of land as comprehensive special district plans. The SD District is authorized and established for the purpose of protecting and promoting the public health, safety, and general welfare of the city and its residents by:

1) Protecting and enhancing the value of properties by encouraging the use of good design principles and concepts, as related to the division of property, site planning and individual improvements with full recognition of the significance and effect they have on the proper planning and development of adjacent and nearby properties.

2) Encouraging, securing and maintaining the orderly and harmonious appearance, attractiveness and aesthetic development of structures and grounds in order that the most appropriate use and value thereof be determined and protected.

3) Providing a method whereby specific development plans are to be based on the general plan as well as other regulations, programs, and legislation as may in the judgment of the city be required for the systematic execution of the general plan.

4) Recognizing the interdependence of land values and aesthetics and providing a method to implement this interdependence in order to maintain the values of surrounding properties and improvements and encouraging excellence of property development, compatible with the general plan for, and character of, the city, with due regard for the public and private interests involved.

5) Ensuring that the public benefits derived from expenditures of public funds for improvements and beautification of streets and public facilities shall be protected by exercise of reasonable controls over the character and design of private buildings, structures and open spaces.

Any use or development of property within an SD district shall be in compliance with the ordinance adopting the specific development plan for such property. The City of Santa Ana currently has 96 SD districts. The different Special Development designations provide development standards, such as height limits, and other requirements specific to the district.

City of Santa Ana Design Guidelines

The Santa Ana Citywide Design Guidelines assist developers and project designers to understand the City's goals and objectives for achieving, enhancing, and maintaining high-quality development in various areas. The design guidelines are organized by development type:

- Citywide Urban Design
- Streetscape
- Downtown Urban Design
- Single and Two-Family Residential
- Multiple Family Residential
- Downtown Development
- Commercial Development
- Special Use Commercial/Industrial
- Industrial Development
- Parking Structures
- Historic Structures
- Signage
- Public Art

The Citywide Design Guidelines consolidate the City's discretionary review documents and provide supplementary design guidance for issues not explicitly stated in the municipal code. The guidelines aim to protect Santa Ana residents from unsightly conditions and to preserve and maximize the image, character, and history of Santa Ana (Santa Ana 2019).

City of Santa Ana Specific Plans and Overlay Zone

Aesthetics are addressed in three specific plans governing certain areas of the city. The following areas currently fall under the jurisdiction of specific plans enforced by the City:

- Harbor Mixed Use Transit Corridor Specific Plan
- Bristol Street Corridor
- Midtown
- MainPlace Specific Plan

Each specific plan acts as a regulatory document that the City uses as a development guide in that area. The specific plans include detailed development standards and design guidelines. In addition to these specific plans, the Metro East Mixed-Use Overlay Zone adopts development standards for each district within the overlay area.

5.1.1.2 EXISTING CONDITIONS

Visual Character

Santa Ana was founded in 1869 by William Spurgeon. The original town laid out by Spurgeon consisted of 24 blocks and served as a shopping center and post office for surrounding agricultural areas. In 1878 the Southern Pacific Railroad arrived, the Santa Fe Railroad followed in 1886, and in 1889 the county seat was established in Santa Ana. These events stimulated the development of businesses, stores, financial institutions, and hotels. The area from First Street to 17th Street was subdivided during the building boom of the 1880s, and many of

the structures in downtown and the surrounding bungalow homes were built in the early 1900s and 1920s (Santa Ana 2010a).

The development of Santa Ana resembles a classic urban development pattern characterized by a series of concentric rings that radiate outward from the original settlement. The city center includes the downtown area (generally defined by 17th Street, Bristol Avenue, 1st Street, and Main Street), residential neighborhoods, and older industrial areas near the rail lines. Subsequent urbanization surrounds the core in a series of concentric rings, with the most recent residential developments in the southwest and northeast corners of the city. Under this arrangement, Santa Ana's urban form has a defined downtown center with other urban form components arranged around it. This urban form has become increasingly blurred with new infill projects such as MainPlace and MacArthur Place/Hutton Center on the city's periphery.

The residential neighborhoods surrounding the downtown exhibit a wide range of architecture and site design. Older neighborhoods are usually nearer the downtown area, and newer residential developments are farther from it. The industrial uses are confined to areas along the railroads as well as in the eastern, southwestern, and southeastern sections of the city. Newer industrial developments are to the east and southwest

The Santa Ana Freeway (I-5) cuts through the northeastern section of the city. The Costa Mesa Freeway (SR-55) generally defines the southwestern boundary of the city, and the San Diego Freeway (I-405) is just south of Santa Ana. The Santa Ana River runs through the western section of the city, and Santiago Creek runs through the northern section.

Character of Focus Areas

South Main Street Focus Area

Throughout its length, the South Main Street corridor has a consistent pattern of retail and service commercial fronting the right-of-way, with lower density residential neighborhoods filling in behind to the east and west boundaries. In the southwest corner, a row of warehouses constitutes the only current industrial uses in the focus area. The focus area also has four public schools—Manuel Esqueda Elementary School, Cesar E. Chavez High School, Lathrop Intermediate School, and Benjamin Franklin Elementary School. Existing buildings in the focus area generally range between one to two stories. However, some existing buildings exceed two stories, including the Southtown Apartments building (4 stories) at 2140 South Main Street. Additionally, multiple three-story apartment buildings occur along Broadway, adjacent to the focus area.

More than half of the land (54.2 percent) in the South Main Street focus area has a General Plan land use designation of Low Density Residential, and approximately 40 percent of the land is designated General Commercial (see Figure 3-6, *Current General Plan Land Use Plan,* and Table 3-3, *Current General Plan Land Use Designations and Statistics*). The remaining 5.8 percent of the focus area has the following land use designations: Institutional (3.1 percent), Industrial (2.3 percent), and District Center (0.5 percent). Table 5.1-1 summarizes the general intensity and height in the focus area. This focus area generally allows heights up to 35 feet. In addition, this focus area includes multiple SD districts including SD 40 (Heninger Park) and SD 72 (Artist Gateway), which allow development up to 45 feet.

Table 5.1-1 Intensity and Height Comparison: Current General Plan vs. GPU

Land Use Designation	Acres		Intensity/Density		Maximum Height	
	Current GP	GPU	Current GP	GPU	Existing Height[1]	GPU
Grand Avenue/17th Street						
General Commercial	113.3	19.9	FAR 0.5-1.0	FAR 1.0	Generally 1–2 stories, but up to 5 stories	2 stories
Institutional	7.7	-	FAR 0.2-0.5	-		-
Low Density Residential	34.5	-	7 du/ac	-		-
Open Space	1.1	1.1	FAR of 0.2	n/a		n/a
Professional and Administrative Office	14.8	-	FAR 0.5-1.0	-		-
Industrial/Flex	-	7.1	-	FAR 1.5		3 stories
District Center	-	23.7	-	FAR 2 or 90du/ac		6 stories
Urban Neighborhood	-	119.7	-	FAR of 1.5 or 40du/ac		4 stories
55 Freeway/Dyer Road						
District Center	1.8	158.0	FAR 1.7	FAR 2.0 or 90 du/ac	Generally 1–2 stories, but up to 10 stories	6 stories
General Commercial	66.9	68.0	FAR 0.5-1.0	1.5 FAR		2 stories
Industrial	9.2	-	FAR of 0.45	-		
Industrial/Flex	-	127.4	-	FAR 3.0		10 stories
Open Space	3.5	1.1	FAR of 0.2	n/a		n/a
Professional and Administrative Office	273.2	-	FAR 0.5-1.0	-		-
South Bristol Street						
District Center	90.9	108.3	FAR 1.0	FAR 2.0 -5.0 or 90du/ac-125 du/ac	Generally 1–2 stories, but up to 3 stories in focus area	10 stories (between MacArthur & Alton) or 25 stories (between MacArthur & Sunflower)
Urban Neighborhood	-	85.7	-	FAR 1.5 or 30 du/ac		3 stories
General Commercial	92.6	-	FAR 0.5-1.0	-		-
Medium Density Residential	13.0	-	15 du/ac	15 du/ac		-
Open Space	3.4	6.0	FAR of 0.2	n/a		n/a
South Main Street						
District Center	1.7	-	FAR 1.0	-	Generally 1–2 stories, but up to 4 stories	-
Urban Neighborhood	-	101.7	-	FAR 1.0 or 20 du/acre		3 stories
General Commercial	124.8	-	FAR 0.5-1.0	-		-
Industrial	7.1	-	FAR of 0.45	-		-
Industrial/Flex	-	29.0	-	FAR 1.5		3 stories
Institutional	9.6	19.2	FAR 0.2-0.5	FAR 2.0		3 stories
Low Density Residential	169.1	162.3	7 du/ac	7 du/ac		2 stories

Table 5.1-1 Intensity and Height Comparison: Current General Plan vs. GPU

Land Use Designation	Acres		Intensity/Density		Maximum Height	
	Current GP	GPU	Current GP	GPU	Existing Height[1]	GPU
West Santa Ana Boulevard						
General Commercial	26.7	21.5	FAR 0.5-1.0	FAR 1.5	Generally 1–3 stories, but up to 11 stories	2 stories
Industrial	85.4	-	FAR of 0.45	-		-
Industrial/Flex	-	87.9	-	FAR 1.5		3 stories
Institutional	46.2	45.5	FAR 0.2-0.5	FAR 2.0		2 stories
Corridor Residential	-	10.0	-	30 du/ac		3 stories
Low Density Residential	146.9	108.1	7 du/ac	7 du/ac		2 stories
Low-Medium Density Residential	-	6.8	-	11 du/ac		2 stories
Medium Density Residential	27.0	27.0	15 du/ac	15 du/ac		3 stories
Open Space	133.6	133.6	FAR of 0.2	-		2 stories
Professional and Administrative Office	13.5	6.2	FAR 0.5-1.0	FAR 2.0		3 stories
Urban Neighborhood	2.4	35.0	FAR 0.5-1.5	FAR 1.5 or 30du/ac		3 stories
Balance of City						
District Center	124.2	124.2	FAR 1.0-5.0	FAR 1.0-5.0	Varies[2]	No Change[2]
General Commercial	424.2	424.2	FAR 0.5-1.0	FAR 0.5-1.0		
Industrial	2,159.6	2,159.6	FAR of 0.45	FAR of 0.45		
Institutional	886.7	886.7	FAR 0.2-0.5	FAR 0.2-0.5		
Low Density Residential	6,173.3	6,173.3	7 du/ac	7 du/ac		
Low-Medium Density Residential	429.0	429.0	11 du/ac	11 du/ac		
Medium Density Residential	335.3	335.3	15 du/ac	15 du/ac		
One Broadway Plaza District Center	4.1	4.1	FAR of 2.9	FAR of 2.9		
Open Space	793.8	793.8	FAR of 0.2	FAR of 0.2		
Professional and Administrative Office	260.4	260.4	FAR 0.5-1.0	FAR 0.5-1.0		
Urban Neighborhood	4.1	4.1	FAR 0.5-1.5	FAR 0.5-1.5		

[1] The "Existing Heights" column documents the existing heights found within the city. The City's zoning code establishes maximum heights within the city. It generally allows up to 35 feet in height. However, as discussed under Section 5.1.1.1, *Regulatory Background*, 35 feet may be exceeded provided that certain provisions are met. In addition, the City has specific development zones, overlay zones, and specific plan zones that provide specific development specifications for that zone. For example, the Transit Zoning Code allows up to 25 stories in the Transit Village designation.

[2] Height district I generally allows up to 35 feet (some residential zoning districts limit height to 27 feet and 2 stories). Provisions in height district I and height district II allow heights to exceed 35 feet. Moreover, additional height limits are set by applicable specific development, overlay zone, or specific plan. For example, the One Broadway Plaza District Center allows development up to 493 feet.

Grand Avenue and 17th Street Focus Area

The area is currently primarily business oriented, with offices and commercial storefronts occupying more than 125 acres. A number of large apartment complexes also line the Grand Avenue corridor, constituting roughly one-fifth of the focus area. The United States Postal Service North Grand office and Edison substation, near

the corners of Grand and Santa Clara Avenue, account for the remaining acreage. Existing buildings in the focus area generally range between one to two stories. However, some existing buildings exceed two stories, such as the Santa Ana Medical Arts Building (5 stories) at 1125 17th Street, and the Orange County Register building (5 stories) at 625 North Grand Avenue.

More than half of the focus area (approximately 66.1 percent) has a General Plan land use designation of General Commercial. Approximately 20.1 percent of the focus area has a General Plan land use designation of Low Density Residential. The remaining 13.8 percent of the focus area is characterized by Professional and Administrative Office (8.6 percent), Institutional (4.5 percent), and Open Space (0.6 percent). Table 5.1-1 summarizes the general intensity and height within the focus area. This focus area generally allows heights up to 35 feet. In addition, this focus area also includes SD 21 (The Orange County Register), which allows development up to 150 feet.

West Santa Ana Boulevard Focus Area

The area is primarily a mix of residential (174 acres), commercial (43 acres), and a variety of industrial (85 acres) uses, with large county and federal government complexes on the east end leading to the Downtown/Civic Center. Willowick Golf Course is also within the focus area and occupies approximately 134 acres adjacent to the Santa Ana River Channel. Existing buildings within the focus area generally range between one to two stories, with three-story buildings scattered throughout the focus area. However, some existing buildings exceed three stories, such as civic and apartment buildings in and near the northeast corner of the focus area that extend up to 11 stories. Adjacent to the focus area are a number of multistory buildings, including a four-story mixed-use building at 3630 Westminster Avenue.

Low Density Residential land use designation and Open Space account for more than half of this focus area—30.5 and 27.7 percent, respectively. Industrial land use designation accounts for 17.7 percent of the focus area. The remaining 24.1 percent of the focus area consists of Institutional (9.6 percent), General Commercial (5.5 percent), Medium Density Residential (5.6 percent), Professional and Administrative Office (2.8 percent), and Urban Neighborhood (0.5 percent). Table 5.1-1 summarizes the general intensity and height within the focus area. This focus area generally allows heights up to 35 feet. In addition, the focus area includes a number of SD districts, including SD 55 (Hutton Development), which allows development up to 138 feet. The Bristol Street Corridor Specific Plan area traverses the focus area and allows for a maximum height of 35 feet.

55 Freeway and Dyer Road Focus Area

Office parks and a variety of industrial facilities make up the majority of the focus area (253 acres), with hotels and other service-oriented commercial uses concentrated around the freeway (94 acres). Santa Ana recently approved the development of a large apartment complex (currently under construction) near the intersection of Dyer Road and Red Hill Avenue that will introduce residential uses to the area for the first time. The focus area also sits adjacent to the Tustin Legacy redevelopment in Tustin. This focus area generally includes one- to two-story office and industrial buildings. Multi-story hotel buildings are on the west side of the focus area and extend up to 10 stories. A three-story hotel building is at 2600 Red Hill Avenue in the focus area.

The majority of this focus area has a General Plan land use designation of Professional and Administrative Office (77.1 percent). The remaining 22.9 percent of the focus area has the following designations: General Commercial (18.9 percent), Industrial (2.6 percent), Open Space (1.0 percent), and District Center (0.5 percent). Table 5.1-1 summarizes the general intensity and height in the focus area. This focus area generally allows heights up to 35 feet. In addition, the focus area includes a number of SD districts, including SD 88 (The Heritage), which allows development up to 100 feet.

South Bristol Street Focus Area

The South Bristol Street focus area sits on the southern border of Santa Ana, directly adjacent to South Coast Plaza in Costa Mesa. Extending from Warner Avenue to Sunflower Avenue, the 1.5-mile-long corridor is currently almost entirely commercially focused, with more than 180 acres occupied by a variety of retail and service businesses. Commercial uses tend to be less intense north of Alton Avenue and gradually intensify toward South Coast Plaza. Although residential uses make up less than 10 percent of the focus area, the corridor is surrounded by neighborhoods on its east and west sides, with lower density neighborhoods in the north and more intense multifamily neighborhoods in the south. Existing buildings along Bristol Street in the focus area generally range between one to two stories (with occasional 3-story structures). The southern side of the focus area is adjacent to the South Coast Plaza shopping mall and has multiple high rises of up to 21 stories.

The General Plan land use designations of District Center and General Commercial characterize most of this focus area at 91.8 percent (45.5 and 46.3 percent, respectively). Medium Density Residential makes up 6.5 percent of the focus area, and Open Space accounts for 1.7 percent. Table 5.1-1 summarizes the general intensity and height within the focus area. This focus area generally allows heights up to 35 feet. The South Bristol Street focus area encompasses SD 48 (South Coast Village), which allows for development up to 35 feet.

Historic Districts

As discussed in Section 5.4, *Cultural Resources,* the City of Santa Ana has three designated historic neighborhoods—Downtown, French Park, and Heninger Park (see Figure 5.4-1). The French Park Historic District is a 20-square-block residential district northeast of Santa Ana's historic core and includes Victorian and Craftsman residences, including some still existing from the 1880s. Additionally, residential development surrounding Santa Ana's downtown historic core established many of Santa Ana's oldest neighborhoods today, such as Heninger Park. By the 1930s, the French Park neighborhood and other neighborhoods surrounding downtown were fully developed. By the late 1940s, Downtown Santa Ana was thriving with construction of many department stores. During this time, the need for postwar housing impacted the historic character of many neighborhoods and their historic buildings, such as French Park. The early 1960s through the late 1970s exhibited a trend of downtown business decay. Today, notable residential resources are concentrated in early residential neighborhoods such as the French Park Historic District, Heninger Park Historic District, Floral Park, Wilshire Square, other Historically Sensitive Neighborhoods, and surrounding the Downtown Santa Ana Historic District, although an increasing number of post–World War II properties have also been recognized. Notable commercial resources are concentrated in the Downtown Santa Ana Historic District along Fourth Street and the adjacent streets and along the Main Street and Broadway corridors. Downtown also contains notable examples of institutional and infrastructural resources (Chattel 2020).

The French Park neighborhood generally consists of one- to two-story single-family and multifamily residential homes. The Heninger Park neighborhood generally consists of one- to two-story single-family and multifamily residential buildings, with dispersed three-story multifamily buildings. Downtown Santa Ana includes commercial and civic use buildings that range in height from one to six stories.

Natural Resources

Santa Ana is a built-up, urban community with open space and vacant land scattered in various locations. As a result, readily apparent resources, such as natural habitat and wildlife, are limited. Certain stretches of Santiago Creek offer undisturbed plant and wildlife environments. Some conserved land adjacent to the creek in the northeastern portion of the city contains coast live oak trees.

Outside of these areas are only remnants of native habitats and vegetation communities. However, open space lands held for park and recreational uses offer opportunities for enjoyment of a rare urban resource. River View Golf Course, Willowick Golf Course, Centennial Regional Park, Angels Community Park, Heritage Park, and other community parks within the city boundaries contain maintained landscaped areas with ornamental vegetation.

Landforms

Santa Ana is in the Santa Ana Valley in southwestern California. Situated on the Santa Ana River, it is 10 miles east of the Santa Ana Mountains and about 12 miles from the Pacific Ocean.

The headwaters of the Santa Ana River are in the San Bernardino Mountains, and the river travels nearly 100 miles before it spills into the Pacific Ocean. In Orange County, the Santa Ana River traverses seven cities, including Santa Ana. Within Santa Ana, the river extends from SR-22 to MacArthur Boulevard. This corridor represents 116 acres of open space in the city. The city is near the bottom of the watershed and therefore receives the runoff from the upper watershed. Though the majority of the river has been channelized for flood protection, it also provides open space relief to the adjacent urbanized areas. Despite its channelization, there are regional riding and hiking trails along the river.

Scenic Corridors

According to the California Scenic Highway Mapping System, there are no state-designated scenic highways in or near the plan area (Caltrans 2019). However, the City has identified scenic corridors that form the image of Santa Ana in the scenic corridors element of the existing General Plan. The scenic corridors are linear features for the movement of people and vehicles, such as streets, highways, and waterways and their associated pedestrian and bicycle trails. The foundation of the scenic corridors is the series of mixed-use corridors. The scenic corridors element defines five scenic corridors, shown in Figure 5.1-1, *Scenic Corridors,* and summarized following.

- **Primary street corridors** that are significant transportation and activity corridors in the city and are accessible from all freeways. They include the 1st/4th Street, Main Street/Broadway, and MacArthur Boulevard corridors. At the edges of the city, these primary corridors form major city entry points.

- **Secondary street corridors** link neighborhoods, district centers, and mixed-use corridors. They include 17th Street, Edinger Avenue, and Bristol Street.
- **Water-course corridors** operate at a regional scale and are part of the county open space network. They include the Santa Ana River and Santiago Creek.
- **Intercity corridors** run through multiple jurisdictions and are major image makers for the city. They include Harbor Boulevard and Fairview Street.
- **High-speed scenic corridors** operate at a regional scale and influence the city's image. They include SR-55, SR-22, and the Santa Ana Freeway (I-5). These corridors provide views of the City of Santa Ana and largely influence the public's aesthetic and visual experience of the city (Santa Ana 2010b).

Landmarks

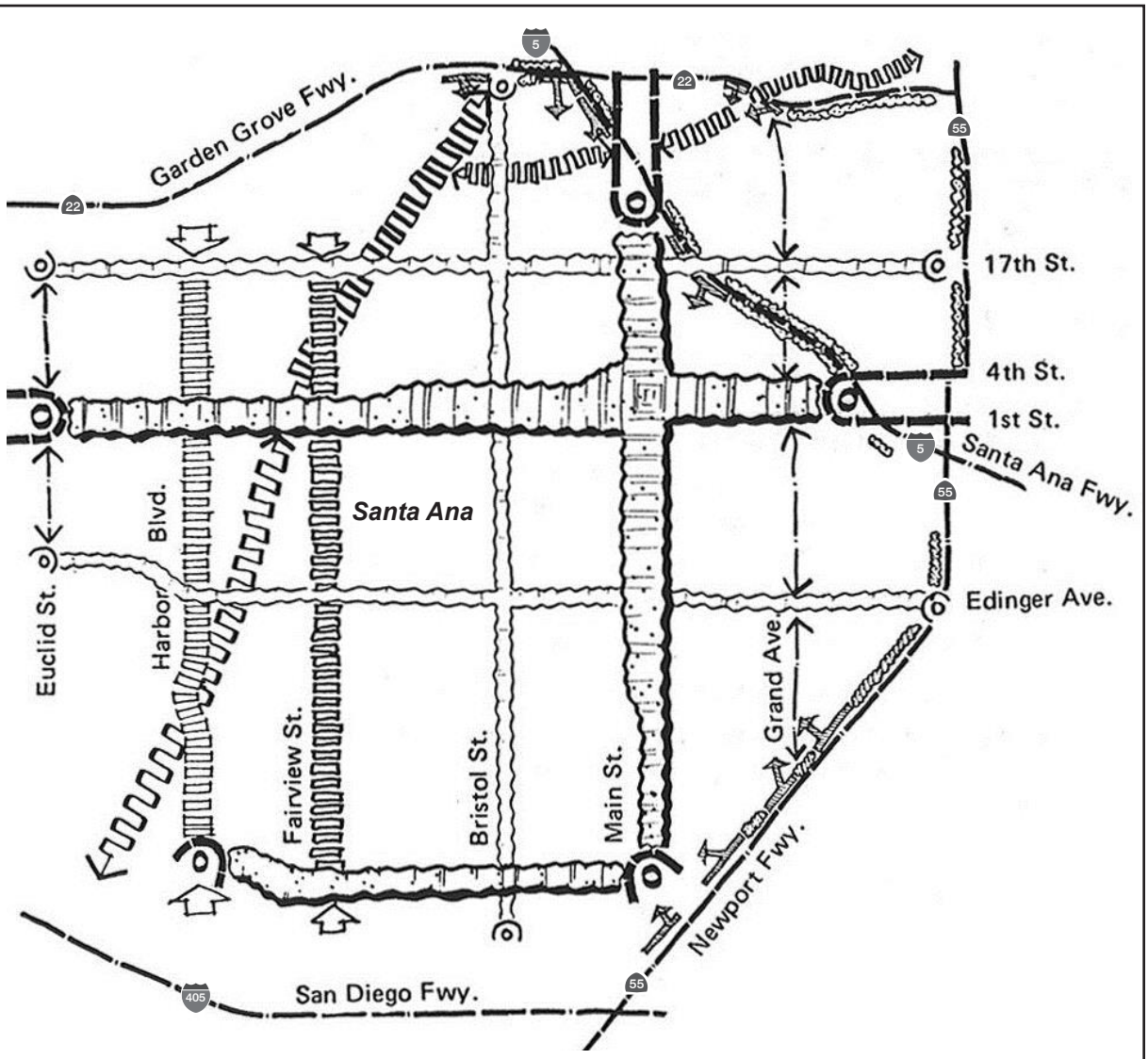
Landmarks are elements of the urban form containing design features that reinforce their uniqueness and memorability. Landmarks, by their nature, attract and hold people's attention. Most of the existing landmarks in the city are concentrated along I-5 and in the downtown, with relatively few in other locations. Some of these landmarks have been in the city for many years and are well known. Good examples of this are the old Orange County Courthouse on Santa Ana Boulevard in the downtown area, Bowers Museum on north Main Street, and the water tower along I-5 (see Figure 3-5a). Other landmarks are newer, though they still have established reputations as recognizable landmarks. Good examples are the Discovery Cube, Xerox Center tower, and Hotel Terrace, or the Vietnamese Catholic Community Center and Chapel at Seventeenth Street and Harbor Boulevard. In addition, most neighborhoods have reference points that serve as local landmarks and generally include schools, parks, church buildings, or even a well-established comer store (Santa Ana 2010c).

Light and Glare

Light pollution refers to a general glow in the night sky that is common in an urbanized setting. The major concern is related to light trespass, that is, bothersome lighting or intense lighting that spills over to uses that may be sensitive to light, especially at night. Glare is the sensation of brightness within a visual field that is greater than the surrounding brightness or the brightness to which the eyes are adapted. Glare is often caused by light sources directly within the line of sight or reflective surfaces at the same and opposite angle as a light source and can temporarily impair vision.

Sources of light and glare in the plan area include building lights (interior and exterior), security lights, sign illumination, field lighting at local schools, and parking-area lighting. Other sources of nighttime light and glare include street lights and vehicular traffic along surrounding roadways. Additionally, a significant amount of ambient lighting comes from surrounding communities and roadways because the plan area is adjacent to highly urbanized portions of the cities of Orange to the north, Tustin to the east, Irvine and Costa Mesa to the south, and Fountain Valley and Garden Grove to the west. Large, light-intensive institutions and facilities near the city's boundary include John Wayne International Airport to the south and Angel Stadium of Anaheim to the north.

Figure 5-1-1 - Scenic Corridors



NOT TO SCALE

Source: City of Santa Ana, 2010

5. Environmental Analysis
AESTHETICS

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The types of land uses that are typically sensitive to excess light and glare include homes, hospitals, senior housing, and other types of uses where excessive light may disrupt sleep. In addition, excessive light and glare may interfere with the vision of drivers.

5.1.2 Thresholds of Significance

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

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

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

AE-3 In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality.

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

5.1.3 Regulatory Requirements and General Plan Update Policies

5.1.3.1 REGULATORY REQUIREMENTS

RR AE-1 The City shall enforce adherence with the California Building Code, including provisions of the Building Energy Efficiency Standards related to lighting.

RR AE-2 The City shall enforce development standards and other general provisions as detailed in the Zoning Code (Chapter 41 of the Municipal Code) to ensure consistency between the City's General Plan and proposed development projects. This includes compliance with the requirements of any ordinance adopting specific development plans.

RR AE-3 The City shall enforce the development standards and design guidelines of adopted specific plans. In addition to these specific plans, the City will enforce the development standards of the Metro East Mixed-Use Overlay Zone for each district within the overlay area.

5.1.3.2 GENERAL PLAN UPDATE POLICIES

The following are relevant policies of the Santa Ana General Plan update, which may reduce potential impacts to aesthetics as a result of implementation.

Circulation Element

- **Policy 1.6 Complete Streets.** Transform travelways to accommodate all users through street design and amenities, such as sidewalks, trees, landscaping, street furniture, and bus shelters.
- **Policy 1.8 Environmental Sustainability.** Consider air and water quality, noise reduction, neighborhood character, and street-level aesthetics when making improvements to travelways.
- **Policy 3.2 Nonmotorized Travelway Amenities.** Enhance nonmotorized travelways with amenities such as landscaping, shade trees, lighting, benches, crosswalks, rest stops, bicycle parking, and support facilities that promote a pleasant and safe experience.
- **Policy 3.7 Complete Streets Design.** Enhance streets to facilitate safe walking, bicycling, and other nonmotorized forms of transportation through community participatory design.
- **Policy 4.5 Land Use Development Design.** Ensure that the placement of buildings, design features, and street environment create a desirable and active streetscape.
- **Policy 5.1 Enhanced Street Design.** Improve the beauty, character, and function of travelways with amenities such as landscaped parkways and medians, bike lanes, public art, and other amenities.
- **Policy 5.2 Rail Corridors.** Coordinate with rail service providers to improve the aesthetics of rail corridors, and reduce noise levels, and mitigate traffic conflicts and other environmental hazards.
- **Policy 5.3 Travel Views.** Promote the undergrounding of utilities and the reduction of visual clutter along travelways.
- **Policy 5.9 Street Trees.** Support the greening of City streets through the establishment and maintenance of an urban forest to improve street aesthetics, filter pollution, and address GHG emissions.

Conservation Element

- **Policy 2.1 Native Wildlife Habitat Protection.** Protect and enhance natural vegetation in parks and open spaces for wildlife habitat, erosion control, and to serve as noise and scenic buffers.
- **Policy 2.4 Scenic Linkages.** Ensure that development and travelways surrounding key destinations, historic sites, recreational areas, and open space preserve and create scenic linkages.

Economic Prosperity Element

- **Policy 3.11 Improve Image.** Create vibrant public spaces through arts and culture projects that enhance urban quality of life, expand the tax base, and improve regional and community image.

Historic Preservation Element

- **Policy 1.1 Architectural and Design Standards.** Preserve unique neighborhoods and structures in Santa Ana through implementation of the Citywide Design Guidelines and historic preservation best practices.
- **Policy 1.2 Federal Standards for Rehabilitation.** Ensure rehabilitation of historic buildings comply with the Secretary of Interior's Standards for the Treatment of Historic Properties and that new construction in historic districts is compatible with context.
- **Policy 1.3 Historic Districts and Design Standards.** Explore opportunities to preserve neighborhoods with largely intact historic buildings and character through the creation of historic districts or neighborhood design standards.
- **Policy 1.6 Lead by Example.** Ensure that all City-owned historic resources and cultural facilities reflect exceptional architecture and historically appropriate features to celebrate Santa Ana as a world-class city.
- **Policy 1.8 Reuse of Historic Buildings.** Support flexible land use standards to facilitate the adaptive reuse of historic buildings with a variety of economically viable uses, while minimizing impacts to the historic value and character of sites and structures.
- **Policy 1.9 Historic Downtown.** Strengthen the image and identity of Downtown through unifying design and architectural themes that are compatible with existing historic fabric.

Land Use Element

- **Policy 1.1 Compatible Uses.** Foster compatibility between land uses to enhance livability and promote healthy lifestyles.
- **Policy 2.8 City Image.** Encourage land uses, development projects, and public art installations that promote the City's image as a cultural and business friendly regional center.
- **Policy 3.1 Community Benefits.** Support new development which provides a net community benefit and contributes to neighborhood character and identity.
- **Policy 3.4 Compatible Development.** Ensure that the scale and massing of new development is compatible and harmonious with the surrounding built environment.
- **Policy 3.7 Attractive Environment.** Promote a clean, safe, and creative environment for Santa Ana's residents, workers, and visitors.
- **Policy 4.2 Public Realm.** Maintain and improve the public realm through quality architecture, street trees, landscaping, and other pedestrian-friendly amenities.
- **Policy 4.10 Thriving Downtown.** Encourage new development and enhancement of Downtown Santa Ana through creative, sustainable, and innovative design solutions.

Noise Element

- **Policy 1.2 Sound Design.** Encourage functional and attractive designs to mitigate excessive noise levels.

Open Space Element

- **Policy 1.7 Community Building.** Ensure that park facilities and programs reflect the priorities of residents in the surrounding neighborhoods, with attention to place-making elements that foster social interaction and community pride such as art, landscape, monuments, murals, play equipment, and seating.
- **Policy 2.4 Urban Forest.** Maintain, preserve, and enhance the city's urban forest as an environmental, economic, and aesthetic resource to improve residents' quality of life.
- **Policy 3.5 Visual Corridors.** Protect visual corridors of and adjacent to public open spaces from intrusive and incompatible development.

Public Services Element

- **Policy 1.1 Maintenance and Design.** Provide and maintain public facilities that reinforce community identity through high quality design.

Urban Design Element

- **Policy 1.1 Design Quality.** Ensure all developments feature high quality design, materials, finishes, and construction.
- **Policy 1.2 Public Art.** Require public art as part of major developments and the public realm improvements.
- **Policy 1.3 Delineation of Public Spaces.** Encourage site design that clearly defines public spaces through building placement and orientation.
- **Policy 1.4 Safety through Design.** Incorporate crime prevention design features into private and public developments to prevent loitering, vandalism and other undesirable activities.
- **Policy 1.5 Attractive Public Spaces.** Encourage community interaction through the development and enhancement of plazas, open space, people places, and pedestrian connections with the public realm.
- **Policy 1.6 Active Transportation Infrastructure.** Support the creation of citywide public street and site amenities that accommodate and promote an active transportation-friendly environment.
- **Policy 1.7 Visual Clutter.** Promote the beautification and accessibility of the public realm through the undergrounding of utility lines and aboveground equipment.

- **Policy 2.1 Enhanced Public Realm Experience.** Encourage development to enhance the existing environment through the use of creative architectural design and sustainable streetscape treatments that are consistent on each corridor.
- **Policy 2.2 Compatibility with Setting.** Encourage the compatibility of new development with the scale, bulk, and pattern of existing development.
- **Policy 2.3 New Life for Old Buildings.** Encourage the preservation and reuse of historic and architecturally significant structures to maintain urban fabric and reduce overall energy consumption associated with new construction.
- **Policy 2.4 Intentional Design.** Encourage design and architecture on private and public property that accentuate focal points, activity nodes, and historic areas.
- **Policy 2.5 Relation to Surroundings.** Ensure new development exhibits a functional, comfortable scale in relation to its neighborhood.
- **Policy 2.6 Preserve Neighborhood Character.** Preserve the character and uniqueness of existing districts and neighborhoods.
- **Policy 2.7 Building and Strengthening Identity.** Collaborate with community stakeholders to strengthen and foster development of community identity and district character through complementary architecture, unique streetscapes, and programming.
- **Policy 2.8 Innovative Development Strategies.** Explore development and subdivision options that promote new opportunities for sustainable, livable, and affordable development.
- **Policy 2.9 Visual Aesthetic of Built Environment.** Ensure that on and off premise signs and communication equipment are situated to minimize detrimental impacts to the aesthetic quality, character, and image of the surrounding area.
- **Policy 2.10 Greening the Built Environment.** Promote planting of shade trees and require, where feasible, site design that uses appropriate tree species to shade parking lots, streets, and other facilities with the goal of reducing the heat island effect.
- **Policy 2.11 Sustainable Practices.** Encourage sustainable development through the use of drought tolerant landscaping, permeable hardscape surfaces, and energy efficient building design and construction.
- **Policy 3.1 Landscaped Travelways.** Promote visually appealing and sustainable landscaping along freeway corridors, roadway medians, and parkways.
- **Policy 3.2 Activate Paths.** Strengthen and activate the design of paths and adjacent development through enhanced and cohesive streetscapes, architectural themes, and landscaping.

- **Policy 3.3 Foster Community Building.** Promote a safe environment that facilitates social interaction and improves active transportation along corridors.
- **Policy 3.4. Improvements to Streetscape.** Promote streetscape improvement plans that are responsive to community needs, the nature of adjacent uses, path characteristics, street classification, pedestrian scale, and view corridors.
- **Policy 3.5 Activity Node Linkages.** Promote streetscape designs that link major destination points, landmarks, and local activity nodes.
- **Policy 3.6 Linear Park System.** Support open space improvements along roadways and non-vehicular paths, such as bike or multi use trails.
- **Policy 3.7 Natural Recreational Amenities.** Enhance natural and recreational features of Santiago Creek and the Santa Ana River corridors and provide linkages throughout the community.
- **Policy 3.8 Pleasant Travel Experience.** Maximize the use of street trees and parkway landscaping to create a pleasant travel experience and positive City image.
- **Policy 3.9 Scenic Views.** Preserve and enhance scenic views along corridors and other travelways.
- **Policy 3.10 Coordinated Street Improvement Plans.** Coordinate citywide landscape medians and street trees with land use plans and development projects.
- **Policy 3.11 Urban Forest.** Create a diverse urban forest with a variety of sustainable trees in medians, parkways, public open space, and private development.
- **Policy 4.1 Intentional Development.** Support development growth in nodes consistent with the City's vision as the dynamic urban center of Orange County.
- **Policy 4.2 Image Making through Architecture.** Promote development within nodes to reflect the significance of the area and cultivate a positive image of Santa Ana through high quality architecture.
- **Policy 4.3 Activate Open Space.** Ensure architectural and landscape design activates open space, as a means to promote community interaction and enhance the aesthetic quality of development.
- **Policy 4.4 Vibrant Street Life.** Encourage development within nodes that promote pedestrian activities, enhanced amenities, and engaging designs that allow for discovery, excitement, and social interaction.
- **Policy 4.5 Open Space at Nodes.** Promote creative, multipurpose public space within nodes, major development projects, and people places.
- **Policy 4.6 Community Led Installations.** Provide for opportunities to incorporate distinctive, innovative and community informed public art in plazas and open spaces, to promote pedestrian activity.

- **Policy 5.1 Building Presence at Intersections.** Create a strong presence at focus intersections by locating intense building mass and open space areas along the street that include high quality design and materials.
- **Policy 5.2 Linkages Between Public Art.** Promote public art in conveniently accessible and prominent places to physically and visually link development with streetscape and paths.
- **Policy 5.3 Activating Intersections.** Encourage projects at focal intersections that incorporate vertical design features or mixed use development as a means to provide visual presence and encourage pedestrian activity in these areas.
- **Policy 5.4 Intersections for all Travel Modes.** Strengthen active transportation connections and amenities at focal intersections to promote a pleasant and safe experience for non-motorized forms of travel.
- **Policy 6.1 Design with Landmarks.** Strengthen the design of development to frame and enhance landmarks, natural features, and view corridors.
- **Policy 6.2 Appropriate Design Near Landmarks.** Ensure development near existing landmarks is supportive and respectful of architecture, site, and other design features of the landmark.
- **Policy 6.3 Create New Landmarks.** Encourage new development that will lead to the creation of new landmark s in the City and bolster community pride.
- **Policy 7.1 First Impression.** Strengthen the architectural design of developments near gateways to communicate a sense of arrival and inspire positive images of the City.
- **Policy 7.2 Streetscape Improvements.** Enhance Santa Ana's gateways to include unique and distinctive streetscape improvements.
- **Policy 7.3 Improved Freeway Interface Design.** Collaborate with Caltrans and adjacent jurisdictions to enhance freeway interchanges that create a sense of place and arrival.
- **Policy 7.4 Monuments at Gateways.** Promote imaginative and distinctive features, such as entry monuments, public art, decorative landscape, directional signs, landscape statements, and architectural elements that project a positive image and community character at City gateways.
- **Policy 7.5 Transit Corridor Beautification.** Improve transit and rail corridors and interfaces to create a welcoming experience for all travelers.

5.1.4 Environmental Impacts

The evaluation of aesthetics and aesthetic impacts is highly subjective, yet it requires the application of a process that objectively identifies the visual features of the existing environment and their importance. The characterization of aesthetics involves establishing existing visual character, including resources and scenic vistas unique to the project area. Visual resources are determined by identifying existing landforms (e.g.,

topography and grading), views (e.g., scenic resources such as natural features or urban characteristics), viewing points/locations, and existing light and glare (e.g., nighttime illumination). Changes to the existing aesthetic environment that would result due to implementation of the GPU are identified and qualitatively evaluated based on the proposed modifications to the existing setting and the viewer's sensitivity. Impacts are compared to the context of the existing setting, using the thresholds above.

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

Impact 5.1-1: The proposed project would alter the visual appearance of the General Plan Update area. [Thresholds AE-1 and AE-3]

The General Plan Update identifies five focus areas throughout the city where General Plan land use designations would change. The City determined that these areas are suited for new growth and development. These five areas are along major travel corridors, the future OC Streetcar line, and/or linked to the Downtown. The General Plan Update would not change land use designations outside of the five focus areas, including the seven other planning areas throughout the city that represent specific plans and other special zoning areas.

Santa Ana is highly urbanized, and therefore views of the city are characterized by an urban landscape. Visual relief of the urban landscape is provided by the Santa Ana River along the western side of the city and Santiago Creek along the northern end of the city. The existing open space land use designations along these corridors will remain under the GPU. Because the city is highly urbanized, buildout in accordance with the GPU would consist mainly of infill and redevelopment efforts. Although new development would alter the visual appearance of the existing conditions, it would not create a substantially adverse impact on scenic vistas nor degrade the city's visual character or quality.

Proposed land use designations within the focus areas include mainly intensification of already developed and urbanized areas in the city. For example, many areas currently designated for General Commercial and Professional Office will be redesignated Urban Neighborhood or District Center, which allows for expanded mixed-use residential opportunities. Additionally, existing Industrial land use designations in the focus areas will be redesignated to Industrial/Flex, which allows for cleaner industrial and commercial uses with live-work opportunities. Table 5.1-1 compares the existing floor area ratio (FAR) and height under existing conditions and the General Plan Update.

South Main Street Focus Area

The South Main Street focus area is characterized by a mix of residential and nonresidential uses that are generally one to two stories in height. Three-story apartment buildings exist intermittently throughout and adjacent to the focus area. Densities are up to 7 units per acre for Low Density Residential designation and up to 1.0 FAR for General Commercial and District Center designations. Development is generally up to 35 feet.

The GPU will generally maintain existing low-density residential areas. Existing General Commercial and District Center will be redesignated to Urban Neighborhood, which allows for higher density development and

up to three stories. New and/or expanded Industrial/Flex and Institutional areas also allow for higher density development and up to three stories. Artist rendering Industrial/Flex is provided in Figure 5.1-3. The GPU allows for increased density in the focus area compared to existing conditions; however, maximum height is similar to existing conditions.

Grand Avenue/17th Street Focus Area

As discussed under Section 5.1.1.2, *Existing Conditions*, this focus area is characterized by businesses and large apartment complexes along Grand Avenue. Low-density residential areas are dispersed throughout the focus area. Current buildings generally range between one to two stories with some buildings up to five stories (the Santa Ana Medical Arts building and the Orange County Register building). The focus area currently contains an FAR of up to 1.0 and allows for a maximum height of 35 feet above grade (approximately 3 stories[1]).

The GPU continues the business-oriented character of the focus area and allows for mixed-use buildings, infill development, and maintaining the compatible nodes of commercial activities. The GPU allows for an FAR of up to 1.5 north of I-5 and up to 2.0 south of I-5. Similarly, the Urban Neighborhood land use designation, which will characterize most of the northern portion of the focus area, allows buildings up to four stories. The District Center land use designation south of the freeway allows heights up to six stories. The four-story building height limit is visually similar to existing buildings in the focus area. The six-story building height limit is one story taller than existing five-story buildings. Under the GPU, density would increase in this focus area compared to existing conditions. Figure 5.1-2 provides an illustration of Urban Neighborhood in the focus area.

West Santa Ana Boulevard Focus Area

The West Santa Ana Boulevard focus area is characterized by a range of residential and nonresidential uses and a mix of intensities. The Willowick Golf Course characterizes the west side of the focus area. The Santa Ana River traverses the western side of the focus area. Existing buildings generally range between one and three stories. Buildings on the eastern side of the focus area and adjacent to the focus area reach up to 11 stories. Existing residential densities allow up to 15 units per acre (medium density residential) and 27 feet in height or two stories. Existing nonresidential densities allow up to 1.0 FAR and 35 feet in height (approximately three stories[2]).

As shown in Table 5.1-1, the GPU introduces Low-Medium Density Residential and Corridor Residential into the focus area and expands areas designated Urban Neighborhood. The Corridor Residential and Urban Neighborhood designations allow residential densities of 30 dwelling units per acre (du/acre). Nonresidential intensity would increase up to 2.0 FAR. Therefore, the General Plan Update would increase intensity and density of land uses in the focus area. However, heights would be maintained at a maximum of three stories, so development under the GPU would be consistent with existing conditions of the focus area. No changes would occur to the Willowick Golf Course nor parcels that encompass the Santa Ana River. Therefore, visual relief

[1] Assuming approximately 10 feet per story.
[2] Assuming approximately 10 feet per story.

through these areas would be maintained. Figure 5.1-3 provides an illustration of the Industrial/Flex in the focus area.

55 Freeway/Dyer Road Focus Area

As discussed under Section 5.1.1.2, *Existing Conditions*, industrial facilities and office parks comprise the majority of the focus area, with hotels and other service-oriented commercial uses near SR-55. Existing industrial and office structures range between one to two stories, and hotel uses extend up to 10 stories. Generally, existing intensities are at an FAR of up to 1.7. The GPU increases FAR to 3.0 in new Industrial/Flex areas and allows structures up to 10 stories in height. Additionally, the General Plan Update allows for residential uses in the 55 Freeway/Dyer Road focus area at a density of 90 du/acre within the District Center land use designation. The GPU therefore increases intensity of allowed uses compared to existing conditions; however, maximum heights are similar to existing conditions. The addition of residential uses would convert the focus area from an office/industrial character to a mixed-use urban character while enhancing opportunities for office and industrial space.

South Bristol Street Focus Area

As discussed under Section 5.1.1.2, *Existing Conditions*, this focus area is generally characterized by commercial uses, with its southern end adjacent to the South Coast Plaza. The South Bristol corridor is surrounded by residential neighborhoods on both sides. Development intensities and height limits are currently provided up to 1.0 FAR and 35 feet above grade. Residential intensity and maximum height are provided at 15 units per acre and 27 feet above grade (two stories). Existing buildings in the corridor generally range between one to two stories in height with occasional three-story structures. High rises are to the south of the focus area and up to 21 stories in height.

The GPU contributes to this focus area's commercial and mixed-use character and redesignates the focus area as District Center and Urban Neighborhood. The GPU designs the focus area to increase in intensity and height from north to south, with greatest intensities and heights near the South Coast Plaza and existing high rises. On its northern end, the proposed Urban Neighborhood allows densities FAR 1.5 or 30 du/acre and heights up to three stories. The Urban Neighborhood designation increases intensity compared to existing conditions but would allow for development heights consistent with existing conditions. The District Center land use designation in the focus area allows development intensities of 2.0 FAR or 90 du/acre to 5.0 FAR or 125 du/acre; corresponding maximum heights would be 10 stories and 25 stories, respectively. Compared to existing development in the focus area, the GPU allows development at a greater intensity and height. However, maximum height would be visually similar to existing high-rise buildings adjacent to the focus area (see Figure 5.1-4).

Figure 5.1-2 - Artist Rendering of Urban Neighborhood Land Use Designation

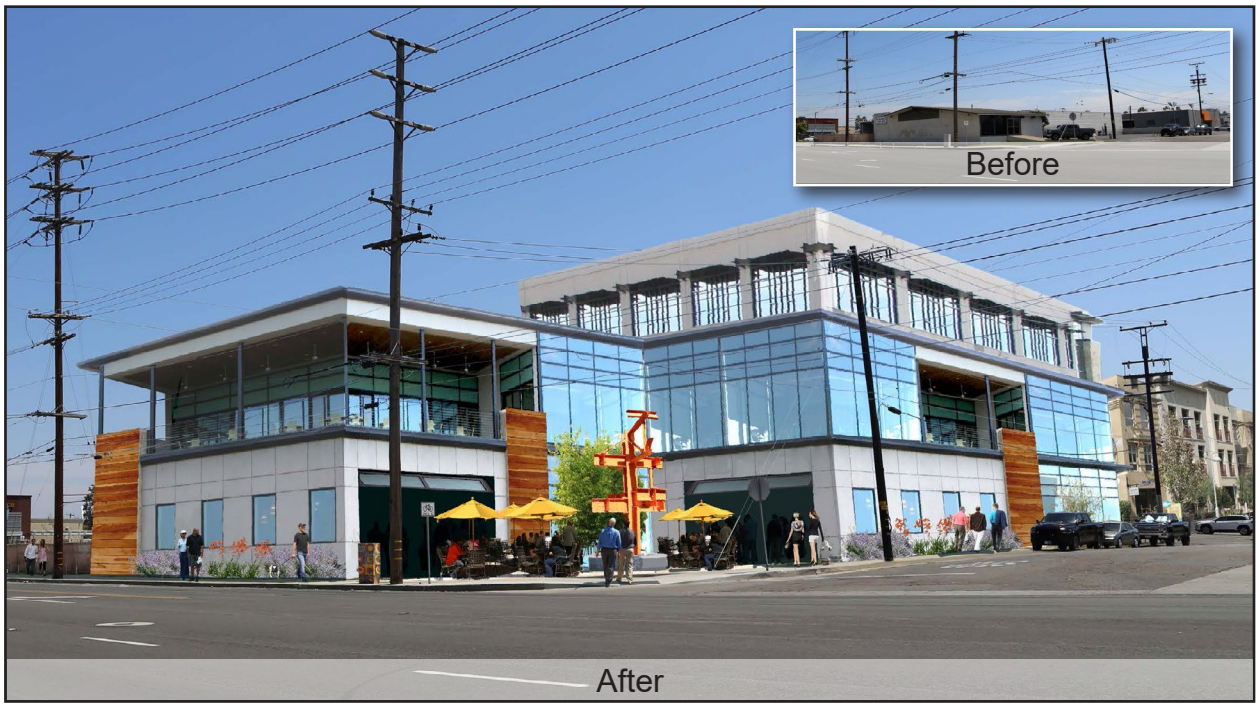


Urban Neighborhood up to Four Stories (e.g. Grand Avenue/17th Street Focus Area).

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Figure 5.1-3 - Artist Renderings of Industrial Flex



Industrial Flex Rendering (e.g. South Main Focus Area).



Industrial Flex Rendering (e.g. West Santa Ana Focus Area).

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Figure 5.1-4 - Artist Renderings of South Bristol Street Focus Area



District Center Between MacArthur Boulevard and Sunflower Avenue.



District Center Between Alton Avenue and MacArthur Boulevard.

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Historic Districts

As shown in Figure 5.4-1, in Chapter 5.4, *Cultural Resources*, none of the focus areas encompass the French Park and Downtown historic districts. However, the South Main Street focus area contains the eastern side of the Heninger Park Historic District (east of Broadway). Heninger Park is generally characterized by one- to two-story multifamily and single-family residential uses. East of Broadway, higher density residential (such as three-story multifamily buildings) and nonresidential uses are near the near major intersections, such as Broadway with 1st Street and Broadway with McFadden Avenue. The GPU generally maintains the Low Density Residential designation of parcels in the Heninger Park Historic District. In the part of Heninger Park in the focus area, the GPU provides new land use designations near the major intersections. Near 1st Street, existing Low Density Residential, District Center, and General Commercial land use designations would be designated to Urban Neighborhood. Near McFadden Avenue, existing Low Density Residential and General Commercial land use designations would be designated to Urban Neighborhood and Institutional. These designations allow greater density of development compared to existing designations, up to 1.0 FAR or 20 du/acre for Urban Neighborhood or 2.0 FAR for Institutional. While the land use designations allowed under the GPU would increase density at the borders of Heninger Park, maximum height would be maintained at three stories, which is consistent with existing development within and near Heninger Park.

Additionally, GPU policies in the historic preservation element (listed below) would ensure that development in Heninger Park is respectful of its historic character.

- **Policy 1.1 Architectural and Design Standards.** Preserve unique neighborhoods and structures in Santa Ana through implementation of the Citywide Design Guidelines and historic preservation best practices.

- **Policy 1.2 Federal Standards for Rehabilitation.** Ensure rehabilitation of historic buildings comply with the Secretary of Interior's Standards for the Treatment of Historic Properties and that new construction in historic districts is compatible with context.

- **Policy 1.3 Historic Districts and Design Standards.** Explore opportunities to preserve neighborhoods with largely intact historic buildings and character through the creation of historic districts or neighborhood design standards.

- **Policy 1.8 Reuse of Historic Buildings.** Support flexible land use standards to facilitate the adaptive reuse of historic buildings with a variety of economically viable uses, while minimizing impacts to the historic value and character of sites and structures.

With regard to the French Park and Downtown National Register Districts, the GPU does not change the land use designations in these districts. Therefore, the visual character of these districts would not be substantially impacted.

Existing Scenic Corridors

The existing scenic corridors element identifies scenic corridors through the city that shape an image of the City and serve as mixed use corridors. Many of the focus areas are centered on an identified scenic corridor, and buildout in the focus areas would contribute to the mixed-use character of these corridors. For example, the South Main Street focus area and the West Santa Ana Boulevard focus area are along primary street corridors, and South Bristol Street focus area is along a secondary street corridor. Seventeenth Street is identified as a secondary street corridor and intersects the Grand Avenue/17th Street focus area. The General Plan Update would redesignate parcels along the corridors as Urban Neighborhood, District Center, or Industrial/Flex.

While the 55 Freeway/Dyer Street focus area is not along a scenic corridor it is located in close proximity to a major City entry. The focus area currently has land use designations of Professional & Administration Office, General Commercial, and District Center. The GPU redesignates the area with Industrial/Flex, District Center, and General Commercial and allows for an urban environment with a mix of uses instead of an area that is almost exclusively focused on professional office and industrial.

The existing scenic corridors element identifies selected views of the city from SR-55 and I-5. Development consistent with the GPU, specifically the proposed land use plan (see Figure 3.7), would enhance views of the city from the SR-55 and I-5. The proposed land use plan reflects a plan that can accommodate growth while preserving its low density residential areas, open space, and areas that provide visual relief from the urban landscape. The GPU enhances primary and secondary scenic corridors and largely nonresidential areas.

Conclusion

As discussed above, buildout under the GPU will be at a greater intensity/density in all five focus areas compared to existing conditions. While maximum height would generally be similar to existing buildings, the overall increase in allowed intensity and height across the focus areas lead to a visually denser urban setting and alter Santa Ana's existing skyline. Buildout under the GPU would not have a substantial adverse effect on scenic vistas (such as the Santa Ana River and Santiago Creek) since these existing open space parcels would remain unchanged.

Buildout under the GPU would be in conformance with State regulations, such as Title 24 (Building Code), and local regulations, such as the City's municipal code and the seven existing specific plan/special zoning areas that guide design and aesthetic quality. Further, development of projects consistent with the GPU would be required to comply with the design and development specifications outlined in the updated land use and urban design elements (see Section 5.1.3.2, *General Plan Update Policies)*. The City is in the process of updating the zoning code since it is legally required to bring the zoning code in compliance with the General Plan Update. The City will update the zoning districts in terms of permitted land uses, development intensity, and building height. Consistency with existing state and local regulations and the GPU policies would ensure that future development in Santa Ana would not degrade the views and visual character of the city and would not conflict with zoning and other regulations that govern scenic quality. The City is in the process of updating the zoning code to bring the code in compliance with the General Plan update. The City will update the zoning districts in terms of permitted land uses, development intensity, and building height. Impacts would be less than significant.

Level of Significance Before Mitigation: With the implementation of RR AE-2 and AE-3 and General Plan Update policies identified above, Impact 5.1-1 will be less than significant.

Impact 5.1-2: The proposed General Plan Update will not alter scenic resources within a state scenic highway. [Threshold AE-2]

As discussed in Section 5.1.1.2, *Existing Conditions*, no state scenic highways, eligible or officially designated, traverse the city nor are located near the city. SR-1, approximately 5.6 miles south of the city, is the closest eligible scenic highway to Santa Ana. SR-91 is the closest officially designated scenic highway, approximately 4.8 miles north of the city (Caltrans 2019). SR-91 runs east-west, and SR-1 runs northwest-southeast. Though buildout consistent with the GPU would lead to infill development and intensify the urban landscape, it would not damage scenic resources, including rock outcroppings, trees, and historic buildings within state scenic highways. Therefore, no impact would occur.

Level of Significance Before Mitigation: No impact.

Impact 5.1-3: The proposed project would generate additional light and glare. [Threshold AE-4]

Nighttime illumination and glare impacts are the effects of buildings and developments' interior and exterior lighting upon adjoining uses and areas. Excessive light and/or glare can impair vision, cause annoyance, affect sleep patterns, and generate safety hazards for drivers. Light sources include security lighting, sign illumination, street lights, lighting in parking areas, and vehicle headlights. Light reflecting off passing and parked cars and large expanses of glazing (i.e., glass windows) or other reflective surfaces can also generate glare. Daytime glare is caused by sunlight reflecting off of reflective surfaces such as parked cars and cars traveling on adjacent roadways, light-colored building material, and windows.

Sources of light and glare within the confines of the city include building lighting (interior and exterior), security-lighting, sign illumination, and parking-area lighting. These sources are mostly associated with the residential, commercial, and industrial uses throughout the city. Other sources of nighttime light and glare include street lights and headlights from vehicular traffic along surrounding roadways. Existing sources of daytime glare include light reflecting off of parked cars and cars traveling on adjacent roadways, light-colored building material, and windows. Additionally, the city is bordered by other cities, including Orange, Tustin, Irvine, Costa Mesa, Fountain Valley, and Garden Grove, and some ambient lighting comes from surrounding communities and roadways.

Development under the General Plan Update would be focused in five focus areas throughout the city. Growth outside of the focus areas is expected to be incremental, limited, and consistent with the existing land use designations. New development and increased density in the five focus areas will generate additional sources of light and glare in the focus areas and in the areas surrounding them, both from increased development and vehicles within and around the focus areas. As discussed in Table 3-7, *General Plan Update Existing and Buildout Population*, in Chapter 3, *Project Description*, each focus area would experience a population growth under the buildout under the General Plan Update. Populations in the 55 Freeway / Dyer Road focus area and the Grand Avenue / 17th Street focus area would increase by 244 and 243 percent, respectively. The population in the

South Bristol Street focus area would increase by 129 percent. Therefore, buildout under the General Plan Update would bring more development and more residents to the focus areas that would generate new and intensify existing sources of light and glare.

All future development accommodated by the General Plan Update would be required to comply with the California Building Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24, Part 6, of the California Code of Regulations) as amended by the Santa Ana Municipal Code Chapter 8, Article II.

By complying with the building codes pertaining to light and glare sources from new developments, nighttime lighting and glare impacts and potential spillover caused by the full buildout of the General Plan Update would be minimized and impacts would be less than significant.

Level of Significance Before Mitigation: With the implementation of RR AE-1 through AE-3, Impact 5.1-3 would be less than significant.

5.1.5 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.1-1, 5.1-2, and 5.1-3.

5.1.6 Mitigation Measures

No significant impacts were identified and no mitigation measures are necessary.

5.1.7 Level of Significance After Mitigation

Impacts 5.1-1 through 5.1-3 would be less than significant with compliance with all applicable federal, state, and local regulations.

5.1.8 References

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5.2 AIR QUALITY

This section of the Draft Program Environmental Impact Report (PEIR) evaluates the potential for the Santa Ana General Plan update to impact air quality in a local and regional context. The analysis in this section is based on land uses associated with the proposed General Plan update, vehicle miles traveled (VMT) provided by IBI Group (see Volume III, Appendix K), electricity data provided by Southern California Edison (SCE), and natural gas use data provided by the Southern California Gas Company (SoCal Gas). The air quality model output sheets are included in Appendix C of this PEIR.

5.2.1 Environmental Setting

5.2.1.1 REGULATORY BACKGROUND

Ambient air quality standards (AAQS) have been adopted at the state and federal levels for criteria air pollutants. In addition, both the State and federal government regulate the release of toxic air contaminants (TACs). Santa Ana is in the South Coast Air Basin (SoCAB) and is subject to the rules and regulations imposed by the South Coast Air Quality Management District (AQMD) as well as the California AAQS adopted by California Air Resources Board (CARB) and National AAQS adopted by the United States Environmental Protection Agency (EPA). Federal, State, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the General Plan update are summarized in this section.

Federal and State

Ambient Air Quality Standards

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

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

Both California and the federal government have established health-based AAQS for seven air pollutants, which are shown in Table 5.2-1. These pollutants are ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO),

sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table 5.2-1 Ambient Air Quality Standards for Criteria Air Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Ozone (O_3)[3]	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm	
Respirable Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m^3	150 µg/m^3	
Respirable Fine Particulate Matter ($PM_{2.5}$)[4]	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m^3	
Lead (Pb)	30-Day Average	1.5 µg/m^3	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 µg/m^3	
	Rolling 3-Month Average	*	0.15 µg/m^3	
Sulfates (SO_4)[5]	24 hours	25 µg/m^3	No Federal Standard	Industrial processes.

Table 5.2-1 Ambient Air Quality Standards for Criteria Air Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hours	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

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

California has also adopted a host of other regulations that reduce criteria pollutant emissions.

- **AB 1493: Pavley Fuel Efficiency Standards.** Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016. In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025.

- **SB 1078 and SB 107: Renewables Portfolio Standards.** A major component of California's Renewable Energy Program is the renewables portfolio standard established under Senate Bills 1078 (Sher) and 107 (Simitian). Under this standard, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010.

- **California Code of Regulations (CCR), Title 20: Appliance Energy Efficiency Standards.** The 2006 Appliance Efficiency Regulations (20 CCR §§ 1601–1608) were adopted by the California Energy Commission on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances.

- **24 CCR, Part 6: Building and Energy Efficiency Standards.** Energy conservation standards for new residential and nonresidential buildings adopted by the California Energy Resources Conservation and Development Commission (now the California Energy Commission) in June 1977.

- **24 CCR, Part 11: Green Building Standards Code.** Establishes planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.

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

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

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

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

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

- **13 CCR Chapter 10 § 2485: Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling.** Generally restricts on-road diesel-powered commercial motor vehicles with a gross vehicle weight rating of greater than 10,000 pounds from idling more than five minutes.

- **13 CCR Chapter 10 § 2480: Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools.** Generally restricts a school bus or transit bus from idling for more than five minutes when within 100 feet of a school.

- **13 CCR § 2477 and Article 8: Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate.** Regulations established to control emissions associated with diesel-powered TRUs.

Air Pollutants of Concern

Criteria Air Pollutants

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

A description of each of the primary and secondary criteria air pollutants and its known health effects is presented below.

- **Carbon Monoxide** is a colorless, odorless gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation (South Coast AQMD 2005; USEPA 2020). The SoCAB is designated under the California and National AAQS as being in attainment of CO criteria levels (CARB 2018).

- **Nitrogen Oxides** are a by-product of fuel combustion and contribute to the formation of ground-level O_3, PM_{10}, and $PM_{2.5}$. The two major forms of NO_X are nitric oxide (NO) and nitrogen dioxide (NO_2). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. The principal form of NO_X produced by combustion is NO, but NO reacts quickly with oxygen to form NO_2, creating the mixture of NO and NO_2 commonly

called NO_X. NO_2 is an acute irritant and more injurious than NO in equal concentrations. At atmospheric concentrations, however, NO_2 is only potentially irritating. NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO_2 exposure concentrations near roadways are of particular concern for susceptible individuals, including asthmatics, children, and the elderly. Current scientific evidence links short-term NO_2 exposures, ranging from 30 minutes to 24 hours, with adverse respiratory effects, including airway inflammation in healthy people and increased respiratory symptoms in people with asthma. Also, studies show a connection between elevated short-term NO_2 concentrations and increased visits to emergency departments and hospital admissions for respiratory issues, especially asthma (South Coast AQMD 2005; USEPA 2020). The SoCAB is designated an attainment area for NO_2 under the National and California AAQS (CARB 2018). On February 21, 2019, CARB's Board approved the separation of the area that runs along the State Route 60 corridor through portions of Riverside, San Bernardino, and Los Angeles counties from the remainder of the SoCAB for state nonattainment designation purposes. The Board designated this corridor as nonattainment. The remainder of the SoCAB remains in attainment for NO_2 (CARB 2019a).

- **Sulfur Dioxide** is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and chemical processes at plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO_2. When sulfur dioxide forms sulfates (SO_4) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_X). Thus, SO_2 is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. Current scientific evidence links short-term exposures to SO_2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects, including bronchoconstriction and increased asthma symptoms. These effects are particularly adverse for asthmatics at elevated ventilation rates (e.g., while exercising or playing) at lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue. Studies also show a connection between short-term exposure and increased visits to emergency facilities and hospital admissions for respiratory illnesses, particularly in at-risk populations such as children, the elderly, and asthmatics (South Coast AQMD 2005; USEPA 2020). The SoCAB is designated attainment under the California and National AAQS (CARB 2018).

- **Suspended Particulate Matter** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM_{10}, include particulate matter with an aerodynamic diameter of 10 microns or less (i.e., ≤10 millionths of a meter or 0.0004 inch). Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns or less (i.e., ≤2.5 millionths of a meter or 0.0001 inch). Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. Both PM_{10} and $PM_{2.5}$ may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems. The EPA's scientific review concluded that $PM_{2.5}$, which penetrates deeply into the lungs, is more likely than PM_{10} to contribute to health effects and at far lower concentrations. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing) (South Coast AQMD 2005).

There has been emerging evidence that ultrafine particulates, which are even smaller particulates with an aerodynamic diameter of <0.1 microns or less (i.e., ≤0.1 millionths of a meter or <0.000004 inch), have human health implications, because their toxic components may initiate or facilitate biological processes that may lead to adverse effects to the heart, lungs, and other organs (South Coast AQMD 2013). However, the EPA or CARB has yet to adopt AAQS to regulate these particulates. Diesel particulate matter is classified by CARB as a carcinogen (CARB 1998). Particulate matter can also cause environmental effects such as visibility impairment,[1] environmental damage,[2] and aesthetic damage[3] (South Coast AQMD 2005; USEPA 2020). The SoCAB is a nonattainment area for $PM_{2.5}$ under California and National AAQS and a nonattainment area for PM_{10} under the California AAQS (CARB 2018).[4]

- **Ozone**, or O_3, is a key ingredient of "smog" and is a gas that is formed when VOCs and NO_X, both by-products of internal combustion engine exhaust, undergo photochemical reactions in sunlight. O_3 is a secondary criteria air pollutant. O_3 concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for its formation. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Breathing O_3 can trigger a variety of health problems, including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level O_3 also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. O_3 also affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges, and wilderness areas. In particular, O_3 harms sensitive vegetation during the growing season (South Coast AQMD 2005; USEPA 2020). The SoCAB is designated extreme nonattainment under the California AAQS (1-hour and 8-hour) and National AAQS (8-hour) (CARB 2018).

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

- **Lead** is a metal found naturally in the environment as well as in manufactured products. Once taken into the body, lead distributes throughout the body in the blood and accumulates in the bones. Depending on the level of exposure, lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and the cardiovascular system. Lead exposure also affects the

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

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

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

[4] CARB approved the South Coast AQMD's request to redesignate the SoCAB from serious nonattainment for PM_{10} to attainment for PM_{10} under the National AAQS on March 25, 2010, because the SoCAB did not violate federal 24-hour PM_{10} standards from 2004 to 2007. The EPA approved the State of California's request to redesignate the South Coast PM_{10} nonattainment area to attainment of the PM_{10} National AAQS, effective on July 26, 2013.

oxygen-carrying capacity of the blood. The effects of lead most commonly encountered in current populations are neurological effects in children and cardiovascular effects in adults (e.g., high blood pressure and heart disease). Infants and young children are especially sensitive to even low levels of lead, which may contribute to behavioral problems, learning deficits, and lowered IQ (South Coast AQMD 2005; USEPA 2020). The major sources of lead emissions have historically been mobile and industrial sources. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector dramatically declined by 95 percent between 1980 and 1999, and levels of lead in the air decreased by 94 percent between 1980 and 1999. Today, the highest levels of lead in air are usually found near lead smelters. The major sources of lead emissions today are ore and metals processing and piston-engine aircraft operating on leaded aviation gasoline. However, in 2008 the EPA and CARB adopted more strict lead standards, and special monitoring sites immediately downwind of lead sources recorded very localized violations of the new State and federal standards.[5] As a result of these violations, the Los Angeles County portion of the SoCAB is designated as nonattainment under the National AAQS for lead (South Coast AQMD 2012; CARB 2018). There are no lead-emitting sources associated with the General Plan update, and therefore, lead is not a pollutant of concern.

Table 5.2-2 summarizes the potential health effects associated with the criteria air pollutants.

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

Table 5.2-2 Criteria Air Pollutant Health Effects Summary

Pollutant	Health Effects	Examples of Sources
Carbon Monoxide (CO)	Chest pain in heart patients Headaches, nausea Reduced mental alertness Death at very high levels	Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves
Ozone (O_3)	Cough, chest tightness Difficulty taking a deep breath Worsened asthma symptoms Lung inflammation	Atmospheric reaction of organic gases with nitrogen oxides in sunlight
Nitrogen Dioxide (NO_2)	Increased response to allergens Aggravation of respiratory illness	Same as carbon monoxide sources
Particulate Matter (PM_{10} & $PM_{2.5}$)	Hospitalizations for worsened heart diseases Emergency room visits for asthma Premature death	Cars and trucks (particularly diesels) Fireplaces and woodstoves Windblown dust from overlays, agriculture, and construction
Sulfur Dioxide (SO_2)	Aggravation of respiratory disease (e.g., asthma and emphysema) Reduced lung function	Combustion of sulfur-containing fossil fuels, smelting of sulfur-bearing metal ores, and industrial processes
Lead (Pb)	Behavioral and learning disabilities in children Nervous system impairment	Contaminated soil

Source: CARB 2009; South Coast AQMD 2005.

Toxic Air Contaminants

People exposed to TACs at sufficient concentrations and durations may have an increased chance of getting cancer or experiencing other serious health effects. These health effects can include damage to the immune system as well as neurological, reproductive (e.g., reduced fertility), developmental, respiratory, and other health problems (USEPA 2019b). By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. There are no air quality standards for TACs. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most relevant to the General Plan update being particulate matter from diesel-fueled engines.

Diesel Particulate Matter

In 1998, CARB identified diesel particulate matter (DPM) as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particles are 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs. Long-term (chronic) inhalation of DPM is likely a lung cancer risk. Short-term (i.e., acute) exposure can cause irritation and inflammatory systems and may exacerbate existing allergies and asthma systems (USEPA 2002).

Air Quality Management Planning

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

2016 AQMP

On March 3, 2017, South Coast AQMD adopted the 2016 AQMP, which serves as an update to the 2012 AQMP. The 2016 AQMP addresses strategies and measures to attain the following National AAQS:

- 2008 National 8-hour ozone standard by 2031
- 2012 National annual $PM_{2.5}$ standard by 2025[6]
- 2006 National 24-hour $PM_{2.5}$ standard by 2019
- 1997 National 8-hour ozone standard by 2023
- 1979 National 1-hour ozone standard by year 2022

It is projected that total NO_X emissions in the SoCAB would need to be reduced to 150 tons per day (tpd) by year 2023 and to 100 tpd in year 2031 to meet the 1997 and 2008 federal 8-hour ozone standards. The strategy to meet the 1997 federal 8-hour ozone standard would also lead to attaining the 1979 federal 1-hour ozone standard by year 2022 (South Coast AQMD 2017), which requires reducing NO_X emissions in the SoCAB to 250 tpd. This is approximately 45 percent additional reductions above existing regulations for the 2023 ozone standard and 55 percent additional reductions to existing regulations to meet the 2031 ozone standard.

Reducing NO_X emissions would also reduce $PM_{2.5}$ concentrations in the SoCAB. However, because the goal is to meet the 2012 federal annual $PM_{2.5}$ standard no later than year 2025, South Coast AQMD is seeking to reclassify the SoCAB from "moderate" to "serious" nonattainment under this federal standard. A "moderate" nonattainment would require meeting the 2012 federal standard by no later than 2021.

Overall, the 2016 AQMP is composed of stationary and mobile-source emission reductions from regulatory control measures, incentive-based programs, co-benefits from climate programs, mobile-source strategies, and reductions from federal sources such as aircrafts, locomotives, and ocean-going vessels. Strategies outlined in

[6] The 2016 AQMP requests a reclassification from moderate to serious nonattainment for the 2012 National $PM_{2.5}$ standard.

the 2016 AQMP would be implemented in collaboration between CARB and the EPA (South Coast AQMD 2017).

Lead Implementation Plan

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

South Coast AQMD Rules and Regulations

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

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

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

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

- **Rule 445, Wood Burning Devices.** This rule is intended to reduce the emission of particulate matter from wood-burning devices and applies to manufacturers and sellers of wood-burning devices, commercial sellers of firewood, and property owners and tenants that operate a wood-burning device.

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

- **Rule 1403, Asbestos Emissions from Demolition/Renovation Activities.** The purpose of this rule is to specify work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials (ACM). The requirements for demolition and renovation activities include asbestos surveying, notification, ACM removal procedures and time schedules, ACM handling and clean-up procedures, and storage, disposal, and landfilling requirements for asbestos-containing waste materials. All operators are required to maintain records, including waste shipment records, and are required to use appropriate warning labels, signs, and markings.

5.2.1.2 EXISTING CONDITIONS

South Coast Air Basin

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

Temperature and Precipitation

The annual average temperature varies little throughout the SoCAB, ranging from the low to middle 60s in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station nearest to the project area that best represents the climatological conditions of the city is the Santa Ana Fire Station (ID 047888). The average low is reported at 43.1°F in January, and the average high is 84.7°F in August (WRCC 2020).

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all rain falls from November to May.. The historical rainfall average for the city is 13.69 inches per year (WRCC 2020).

Humidity

Although the SoCAB has a semiarid climate, the air near the earth's surface is typically moist because of a shallow marine layer. This "ocean effect" is dominant except for infrequent periods when dry, continental air is brought into the SoCAB by offshore winds. Periods of heavy fog are frequent, especially along the coast. Low clouds, often referred to as high fog, are a characteristic climatic feature. Annual average humidity is 70 percent at the coast and 57 percent in the eastern portions of the SoCAB (South Coast AQMD 1993).

Wind

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

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

The mountain ranges to the east inhibit the eastward transport and diffusion of pollutants. Air quality in the SoCAB generally ranges from fair to poor and is similar to air quality in most of coastal Southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions (South Coast AQMD 2005).

Inversions

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, two distinct types of temperature inversions control the vertical depth through which pollutants are mixed. These inversions are the marine/subsidence inversion and the radiation inversion. The height of the base of the inversion at any given time is known as the "mixing height." The combination of winds and inversions are critical determinants in the highly degraded air quality in summer and the generally good air quality in the winter in the project area (South Coast AQMD 2005).

SoCAB Nonattainment Areas

The AQMP provides the framework for air quality basins to achieve attainment of the State and federal ambient air quality standards through the State Implementation Plan. Areas are classified as attainment or nonattainment areas for particular pollutants depending on whether they meet the ambient air quality standards. Severity classifications for ozone nonattainment range in magnitude from marginal, moderate, and serious to severe and extreme.

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

The attainment status for the SoCAB is shown in Table 5.2-3.

Table 5.2-3 Attainment Status of Criteria Air Pollutants in the South Coast Air Basin

Pollutant	State	Federal
Ozone – 1-hour	Extreme Nonattainment	No Federal Standard
Ozone – 8-hour	Extreme Nonattainment	Extreme Nonattainment
PM_{10}	Serious Nonattainment	Attainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Attainment
NO_2	Nonattainment (SR-60 Near Road only)[1]	Attainment/Maintenance
SO_2	Attainment	Attainment
Lead	Attainment	Nonattainment (Los Angeles County only)[2]
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB 2018.

[1] On February 21, 2019, CARB's Board approved the separation of the area that runs along State Route 60 corridor through portions of Riverside, San Bernardino, and Los Angeles counties from the remainder of the SoCAB for State nonattainment designation purposes. The Board designated this corridor as nonattainment. The remainder of the SoCAB remains in attainment for NO_2 (CARB 2019a).

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

Multiple Air Toxics Exposure Study

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

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

The OEHHA updated the guidelines for estimating cancer risks on March 6, 2015. The new method uses higher estimates of cancer potency during early life exposures, which result in a higher calculation of risk. There are also differences in the assumptions on breathing rates and length of residential exposures. Under the new guidelines, South Coast AQMD estimates that risks for a given inhalation exposure level will be about 2.7 times

higher using the proposed updated methods identified in MATES IV (e.g., 2.7 times higher than 418 in one million overall excess cancer risk) (South Coast AQMD 2015a).

Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the city are best documented by measurements taken by the South Coast AQMD. The city is wholly within Source Receptor Area (SRA) 17: Central Orange County.[7] The Costa Mesa-Mesa Verde Drive and Anaheim-Pampa Land Monitoring Station—2 of the 31 monitoring stations South Coast AQMD operates and maintains in the SoCAB[8]—best represent the ambient air quality in the city. Ozone and NO_2 data were obtained from the Costa Mesa-Mesa Verde Drive Monitoring Station, and PM_{10} and $PM_{2.5}$ data were obtained from the Anaheim-Pampa Land Monitoring Station. Data from these stations are summarized in Table 5.2-4. The data show that the area regularly exceeds the State and federal one-hour and eight-hour O_3 standards within the last five recorded years. Additionally, the area has regularly exceeded the State PM_{10} standards and federal $PM_{2.5}$ standard.

Table 5.2-4 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Thresholds Were Exceeded and Maximum Levels				
	2014	2015	2016	2017	2018
Ozone (O_3)[1,2]					
State 1-Hour ≥ 0.09 ppm (days exceed threshold)	2	1	2	0	1
State 8-hour ≥ 0.07 ppm (days exceed threshold)	6	2	0	4	1
Federal 8-Hour > 0.075 ppm (days exceed threshold)	4	1	0	1	0
Max. 1-Hour Conc. (ppm)	0.096	0.099	0.090	0.088	0.112
Max. 8-Hour Conc. (ppm)	0.079	0.079	0.069	0.080	0.071
Nitrogen Dioxide (NO_2)[1]					
State 1-Hour ≥ 0.18 ppm (days exceed threshold)	0	0	0	0	*
Federal 1-Hour ≥ 0.100 ppm (days exceed threshold)	0	0	0	0	*
Max. 1-Hour Conc. (ppm)	0.061	0.052	0.060	0.045	*
Coarse Particulates (PM_{10})[3]					
State 24-Hour > 50 µg/m³ (days exceed threshold)	2	2	3	5	2
Federal 24-Hour > 150 µg/m³ (days exceed threshold)	0	0	0	0	0
Max. 24-Hour Conc. (µg/m³)	85.0	59.0	74.0	95.7	94.6
Fine Particulates ($PM_{2.5}$)[3]					
Federal 24-Hour > 35 µg/m³ (days exceed threshold)	4	3	1	7	7
Max. 24-Hour Conc. (µg/m³)	45.0	45.8	44.4	53.9	63.1

Source: CARB 2020.
ppm = parts per million; parts per billion, µg/m³ = micrograms per cubic meter
1 Data obtained from the Costa Mesa-Mesa Verde Drive Monitoring Station.
2 2018 ozone data obtained from the Anaheim-Pampas Lane Monitoring Station.
3 Data obtained from the Anaheim-Pampas Lane Monitoring Station.

7 South Coast AQMD Rule 701 defines an SRA as: "A source area is that area in which contaminants are discharged and a receptor area is that area in which the contaminants accumulate and are measured. Any of the areas can be a source area, a receptor area, or both a source and receptor area." There are 37 SRAs within the South Coast AQMD's jurisdiction.

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

Existing Emissions

The city consists of commercial, retail, industrial, and institutional land uses and single- and multifamily residences. These uses currently generate criteria air pollutant emissions from natural gas use for energy, heating, and cooking; vehicle trips associated with each land use; and area sources such as landscaping equipment and consumer cleaning products.[9] Table 5.2-5 shows the average daily emissions inventory currently associated with the existing land uses in the city. The inventory also includes emissions from off-road construction equipment associated with construction activities in the plan area.

Table 5.2-5 Santa Ana Criteria Air Pollutant Emissions Inventory

Sector	Existing Criteria Air Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Transportation[1]	831	5,596	25,067	90	1,362	602
Energy	144	1,277	845	8	100	100
Area – Consumer Products[2]	4,212	0	0	0	0	0
Area –Light Equipment[3]	154	415	6,330	1	38	31
Area – Construction Equipment	28	182	589	0	13	11.11
Total	**5,369**	**7,470**	**32,832**	**99**	**1,513**	**744**

Note:
1 EMFAC2017 Version 1.0.2. Based on daily VMT provided by IBI Group. Transportation sector includes the full trip length for internal-internal trips and various trip lengths for external-internal/internal-external trips (see Appendix K). VMT per year based on a conversion of VMT x 347 days per year to account for less travel on weekend, consistent with CARB statewide GHG emissions inventory methodology (CARB 2008).
2 Based on CalEEMod, Version 2016.3.2, methodology utilized to calculate VOC emissions from use of household consumer cleaning products.
3 OFFROAD2017 Version 1.0.1. Light commercial equipment emissions estimated based on employment for the City of Santa Ana as a percentage of Orange County. Construction emissions estimated based on housing permit data for Orange County and the City of Santa Ana from the US Census. Area sources exclude emissions from fireplaces.

Sensitive Receptors

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

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

[9] Emissions from permitted sources are excluded from the existing emissions inventory because the reductions associated with the Industrial sector are regulated separately by South Coast AQMD and are not under the jurisdiction of the City of Santa Ana.

5.2.2 Thresholds of Significance

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

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

AQ-2 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.

AQ-3 Expose sensitive receptors to substantial pollutant concentrations.

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

5.2.2.1 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT THRESHOLDS

CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. The General Plan update's air quality impacts follows the guidance and methodologies recommended in South Coast AQMD's *CEQA Air Quality Handbook* and the significance thresholds on South Coast AQMD's website (South Coast AQMD 1993).[10]

Regional Significance Thresholds

South Coast AQMD has adopted regional construction and operational emissions thresholds to determine a project's cumulative impact on air quality in the SoCAB, shown in Table 5.2-6. The table lists thresholds that are applicable for all projects uniformly, regardless of size or scope. There is growing evidence that although ultrafine particulate matter contributes a very small portion of the overall atmospheric mass concentration, it represents a greater proportion of the health risk from PM. However, the EPA and CARB have not adopted AAQS to regulate ultrafine particulate matter; therefore, South Coast AQMD has not developed thresholds for them.

Table 5.2-6 South Coast AQMD Significance Thresholds

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

Source: South Coast AQMD 2019.

[10] South Coast AQMD's Air Quality Significance Thresholds are current as of April 2019 and can be found at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook.

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

- Increases cancer risk ($PM_{2.5}$, TACs)
- Aggravates respiratory disease (O_3, $PM_{2.5}$)
- Increases bronchitis (O_3, $PM_{2.5}$)
- Causes chest discomfort, throat irritation, and increased effort to take a deep breath (O_3)
- Reduces resistance to infections and increases fatigue (O_3)
- Reduces lung growth in children ($PM_{2.5}$)
- Contributes to heart disease and heart attacks ($PM_{2.5}$)
- Contributes to premature death (O_3, $PM_{2.5}$)
- Contributes to lower birth weight in newborns ($PM_{2.5}$) (South Coast AQMD 2015b)

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

South Coast AQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals exposed to elevated concentrations of air pollutants in the SoCAB and has established thresholds that would be protective of these individuals. To achieve the health-based standards established by the EPA, South Coast AQMD prepares an AQMP that details regional programs to attain the AAQS.

Mass emissions in Table 5.2-6 are not correlated with concentrations of air pollutants but contribute to the cumulative air quality impacts in the SoCAB. The thresholds are based on the trigger levels for the federal New Source Review Program, which was created to ensure projects are consistent with attainment of health-based federal AAQS. Regional emissions from a single project do not single-handedly trigger a regional health impact, and it is speculative to identify how many more individuals in the air basin would be affected by the health effects listed above. Projects that do not exceed the South Coast AQMD regional significance thresholds in Table 5.2-6 would not violate any air quality standards or contribute substantially to an existing or projected air quality violation.

If projects exceed the emissions in Table 5.2-6, emissions would cumulatively contribute to the nonattainment status and would contribute in elevating the associated health effects. Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Health effects associated with particulate matter include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Reducing emissions would further contribute to reducing possible health effects related to criteria air pollutants. However, for projects that exceed the emissions in Table 5.2-6, it is speculative to determine how this would affect the number

of days the region is in nonattainment—since mass emissions are not correlated with concentrations of emissions—or how many additional individuals in the air basin would be affected.

South Coast AQMD has not provided methodology to assess the specific correlation between mass emissions generated and the effect on health that is needed to address the issue raised in *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, Case No. S21978 (known as "Friant Ranch"). Ozone concentrations are dependent upon a variety of complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting ground-level ozone concentrations in relation to the National AAQS and California AAQS, it is not possible to link health risks to the magnitude of emissions exceeding the significance thresholds. However, if a project in the SoCAB exceeds the regional significance thresholds, the project could contribute to an increase in health effects in the basin until the attainment standard are met in the SoCAB.

CO Hotspots

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

In 2007, the SoCAB was designated in attainment for CO under both the California AAQS and National AAQS. The CO hotspot analysis conducted for the attainment by South Coast AQMD did not predict a violation of CO standards at the busiest intersections in Los Angeles during the peak morning and afternoon periods.[11] As identified in South Coast AQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide, peak carbon monoxide concentrations in the SoCAB in the years before redesignation were a result of unusual meteorological and topographical conditions and not of congestion at a particular intersection. Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (BAAQMD 2017).[12]

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

[12] The CO hotspot analysis refers to the modeling conducted by the Bay Area Air Quality Management District for its CEQA Guidelines because it is based on newer data and considers the improvement in mobile-source CO emissions. Although meteorological conditions in the Bay Area differ from those in the Southern California region, the modeling conducted by BAAQMD demonstrates that the net increase in peak hour traffic volumes at an intersection in a single hour would need to be substantial. This finding is consistent with the CO hotspot analysis South Coast AQMD prepared as part of its 2003 AQMP to provide support in seeking CO attainment for the SoCAB. Based on the analysis prepared by South Coast AQMD, no CO hotspots were predicted for the SoCAB. As noted in the preceding footnote, the analysis included some of Los Angeles' busiest intersections, with daily traffic volumes of 100,000 or more peak hour vehicle trips operating at LOS E and F.

Localized Significance Thresholds

South Coast AQMD identifies localized significance thresholds (LST), shown in Table 5.2-7. Emissions of NO_2, CO, PM_{10}, and $PM_{2.5}$ generated at a project site could expose sensitive receptors to substantial concentrations of criteria air pollutants. Off-site mobile-source emissions are not included in the LST analysis. A project would generate a significant impact if it generates emissions that would violate the AAQS when added to the local background concentrations.

Table 5.2-7 South Coast AQMD Localized Significance Thresholds

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

Source: South Coast AQMD 2019.
ppm: parts per million; µg/m^3: micrograms per cubic meter
[1] Threshold is based on South Coast AQMD Rule 403. Since the SoCAB is in nonattainment for PM_{10} and $PM_{2.5}$, the threshold is established as an allowable change in concentration. Therefore, background concentration is irrelevant.

Health Risk Thresholds

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

Table 5.2-8 South Coast AQMD Incremental Risk Thresholds for TACs

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

Source: South Coast AQMD 2019.

5.2.3 Regulatory Requirements and General Plan Policies

5.2.3.1 REGULATORY REQUIREMENTS

RR AQ-1 New buildings are required to achieve the current California Building Energy Efficiency Standards (Title 24, Part 6) and California Green Building Standards Code (CALGreen) (Title 24, Part 11). The 2019 Building Energy Efficiency Standards became effective January 1, 2020. The Building and Energy Efficiency Standards and CALGreen are updated tri-annually with a goal to achieve net zero buildings energy for 2030.

RR AQ-2 Construction activities will be conducted in compliance with California Code of Regulations, Title 13, Section 2449, which requires that nonessential idling of construction equipment is restricted to five minutes or less.

RR AQ-3 Construction activities will be conducted in compliance with any applicable South Coast Air Quality Management District rules and regulations, including but not limited to:

- **Rule 403,** Fugitive Dust, for controlling fugitive dust and avoiding nuisance.
- **Rule 402,** Nuisance, which states that a project shall not "discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property."
- **Rule 1113,** which limits the volatile organic compound content of architectural coatings.
- **Rule 1466,** Soil Disturbance. Projects that involve earth-moving activities of more than 50 cubic yards of soil with applicable toxic air contaminants are subject to this rule.

5.2.3.2 GENERAL PLAN UPDATE POLICIES

The following are relevant policies of the Santa Ana General Plan update, which may reduce air quality impacts.

Circulation Element

- **Policy 1.7 Proactive Mitigation.** Proactively mitigate potential air quality, noise, congestion, safety, and other impacts from the transportation network on residents and business.
- **Policy 1.8 Environmental Sustainability.** Consider air and water quality, noise reduction, neighborhood character, and street-level aesthetics when making improvements to travelways.
- **Policy 3.3 Safe Routes to School.** Lead the development and implementation of safer routes to school by partnering with the school district, residents, property owners, and community stakeholders.

- **Policy 3.4 Regional Coordination.** Coordinate development of the City's active transportation and transit network with adjacent jurisdictions, OCTA, and other appropriate agencies.
- **Policy 3.5 Education and Encouragement.** Encourage active transportation choices through education, special events, and programs.
- **Policy 3.7 Complete Streets Design.** Enhance streets to facilitate safe walking, bicycling, and other nonmotorized forms of transportation through community participatory design.
- **Policy 4.1 Intense Development Areas.** Program multimodal transportation and public realm improvements that support new development in areas along transit corridors and areas planned for high intensity development.
- **Policy 4.2 Project Review.** Encourage active transportation, transit use, and connectivity through physical improvements and public realm amenities identified during the City's Development Review process.
- **Policy 4.3 Transportation Management.** Coordinate with OCTA, employers, and developers to utilize TDM (transportation demand management) strategies and education to reduce vehicle trips and parking demands.
- **Policy 4.5 Land Use Development Design**. Ensure that the placement of buildings, design features, and street environment create a desirable and active streetscape.
- **Policy 4.6 Roadway Capacity Alternatives.** Promote reductions in automobile trips and vehicle miles traveled by encouraging transit use and nonmotorized transportation as alternatives to augmenting roadway capacity.
- **Policy 4.7 Parking.** Explore and implement a flexible menu of parking options and other strategies to efficiently coordinate the response to parking demands
- **Policy 4.9 Air Pollution Mitigation.** Consider land use, building, site planning, and technology solutions to mitigate exposure to transportation related air pollution.
- **Policy 5.4 Green Streets.** Leverage opportunities along streets and public rights-of-way to improve water quality through use of landscaping, permeable pavement, and other best management practices.
- **Policy 5.6 Clean Fuels and Vehicles.** Encourage the use of alternative fuel vehicles and mobility technologies through the installation of supporting infrastructure.
- **Policy 5.9 Street Trees.** Support the greening of City streets through the establishment and maintenance of an urban forest to improve street aesthetics, filter pollution, and address GHG emissions.

Community Element

- **Policy 3.2 Healthy Neighborhoods.** Continue to support the creation of healthy neighborhoods by addressing public safety, improving the built environment, and maintaining building code standards.
- **Policy 3.4 Safe Mobility.** Promote the overall safety of multi-modal streets by developing local and regional programs that educate and inform motorists of non-motorized roadway users.
- **Policy 3.7 Active Lifestyles.** Support programs that create safe routes to schools and other destinations to promote walking, biking and active lifestyles.

Conservation Element

- **Policy 1.1 Regional Planning Efforts.** Coordinate air quality planning efforts with local and regional agencies to meet State and Federal ambient air quality standards in order to protect all residents from the health effects of air pollution.
- **Policy 1.2 Climate Action Plan.** Consistency with emission reduction goals highlighted in the Climate Action Plan shall be considered in all major decisions on land use and investments in public infrastructure.
- **Policy 1.3 Education.** Promote efforts to educate businesses and the general public about air quality standards, health effects, and best practices they can make to improve air quality and reduce greenhouse gas emissions.
- **Policy 1.4 Development Standards.** Support new development that meets or exceeds standards for energy-efficient building design and site planning.
- **Policy 1.5 Sensitive Receptor Decisions.** Consider potential impacts of stationary and non-stationary emission sources on existing and proposed sensitive uses and opportunities to minimize health and safety risks.
- **Policy 1.6 New and Infill Residential Development.** Promote development that is mixed-use, pedestrian-friendly, transit oriented, and clustered around activity centers.
- **Policy 1.7 Housing and Employment Opportunities.** Improve the City's jobs/housing balance ratio by supporting development that provides housing and employment opportunities to enable people to live and work in Santa Ana.
- **Policy 1.8 Promote Alternative Transportation.** Promote use of alternate modes of transportation in the City of Santa Ana, including pedestrian, bicycling, public transportation, car sharing programs and emerging technologies.
- **Policy 1.9 Public Investment Alternative Transportation Infrastructure.** Continue to invest in infrastructure projects that support public transportation and alternate modes of transportation in the City

of Santa Ana, including pedestrian, bicycling, public transportation, car sharing programs, and emerging technologies.

- **Policy 1.10 Transportation Management.** Continue to support and invest in improvements to the City's Transportation Management System, including projects or programs that improve traffic flow and reduce traffic congestion.
- **Policy 1.11 Public Investment in Low- or Zero Emission Vehicles.** Continue to invest in low-emission or zero-emission vehicles to replace the City's gasoline powered vehicle fleet and to transition to available clean fuel sources such as bio-diesel for trucks and heavy equipment.
- **Policy 1.12 Sustainable Infrastructure.** Encourage the use of low or zero emission vehicles, bicycles, non-motorized vehicles, and car-sharing programs by supporting new and existing development that includes sustainable infrastructure and strategies such as vehicle charging stations, drop-off areas for ride-sharing services, secure bicycle parking, and transportation demand management programs.
- **Policy 1.13 City Contract Practices.** Support businesses and contractors that use reduced-emissions equipment for city construction projects and contracts for services, as well as businesses that practice sustainable operations.
- **Policy 1.14 Transportation Demand Management.** Require and incentivize projects to incorporate Transportation Demand Management (TDM) techniques.
- **Policy 2.3 Resource Management**. Efficiently manage soil and mineral resource operations to eliminate significant nuisances, hazards, or adverse environmental effects on neighboring land uses.
- **Policy 3.3 Development Patterns.** Promote energy efficient-development patterns by clustering mixed use developments and compatible uses adjacent to public transportation.
- **Policy 3.11 Energy-Efficient Transportation Infrastructure.** Continue to support public and private infrastructure for public transportation such as bus routes, rail lines, and the OC Streetcar.

Land Use Element

- **Policy 1.5 Diverse Housing Types.** Incentivize quality infill residential development that provides a diversity of housing types and accommodates all income levels and age groups.
- **Policy 1.6 Transit Oriented Development.** Encourage residential mixed-use development, within the City's District Centers and Urban Neighborhoods, and adjacent to high quality transit.
- **Policy 1.7 Active Transportation Infrastructure.** Invest in active transportation connectivity between activity centers and residential neighborhoods to encourage healthy lifestyles.
- **Policy 2.5 Benefits of Mixed Use.** Encourage infill mixed-use development at all ranges of affordability to reduce vehicle miles travelled, improve jobs/housing balance, and promote social interaction.

- **Policy 2.10 Smart Growth.** Focus high density residential in mixed-use villages, designated planning focus areas, Downtown Santa Ana, and along major travel corridors.

- **Policy 3.8 Sensitive Receptors.** Avoid the development of sensitive receptors in close proximity to land uses that pose a hazard to human health and safety, due to the quantity, concentration, or physical or chemical characteristics of the hazardous materials that they utilize, or the hazardous waste that they generate or emit.

- **Policy 3.9 Improving Health.** Improve the health of residents by discontinuing the operation of noxious, hazardous, dangerous, and polluting uses that are in close proximity to sensitive receptors

- **Policy 4.1 Complementary Uses.** Promote complete neighborhoods by encouraging a mix of complementary uses, community services, and people places within a walkable area.

- **Policy 4.3 Sustainable Land Use Strategies.** Encourage land uses and strategies that reduce energy and water consumption, waste and noise generation, air quality impacts, and light pollution.

- **Policy 4.5 VMT Reduction.** Concentrate development along high-quality transit corridors to reduce vehicle miles traveled and transportation related carbon emissions.

Safety Element

- **Policy 2.1 Regional Collaboration.** Consult and collaborate with federal, state, and regional agencies to identify and regulate the disposal and storage of hazardous materials and prevent the illegal transportation and disposal of hazardous waste.

- **Policy 2.2 Hazardous Waste Generators.** Collaborate with appropriate agencies to identify and inventory all users and handlers of hazardous materials to proactively mitigate potential impacts.

- **Policy 2.3 Transportation and Storage.** Coordinate with the County of Orange, the California Department of Transportation, and other relevant parties to enforce state and local laws regulating the storage and transport of hazardous materials within the City of Santa Ana, and limit truck routes through the City to arterials streets away from natural habitats and sensitive land uses.

- **Policy 2.4 Planning and Remediation.** Determine the presence of hazardous materials and/or waste contamination prior to approval of new uses and require that appropriate measures be taken to protect the health and safety of site users and the community.

- **Policy 2.6 Existing Sensitive Uses.** Partner and collaborate with property owners, businesses, and community groups to develop strategies to protect and minimize risks from existing hazardous material sites to existing nearby sensitive uses.

Urban Design Element

- **Policy 1.6 Active Transportation Infrastructure.** Support the creation of citywide public street and site amenities that accommodate and promote an active transportation-friendly environment.
- **Policy 3.10 Coordinated Street Improvement Plans.** Coordinate citywide landscape medians and street trees with land use plans and development projects.
- **Policy 5.4 Intersections for all Travel Modes.** Strengthen active transportation connections and amenities at focal intersections to promote a pleasant and safe experience for non-motorized forms of travel.

5.2.4 Environmental Impacts

5.2.4.1 METHODOLOGY

The air quality evaluation was prepared in accordance with the requirements of CEQA to determine if significant air quality impacts are likely to occur in conjunction with future development that would be accommodated by the proposed General Plan update. The published South Coast AQMD *CEQA Air Quality Handbook* and its updates on the South Coast AQMD website are intended to provide local governments with guidance for analyzing and mitigating project-specific air quality impacts. It provides standards, methodologies, and procedures for conducting air quality analyses in EIRs that were used in this analysis. South Coast AQMD has published additional guidance for LSTs—*Localized Significance Threshold Methodology for CEQA Evaluations* (South Coast AQMD 2008a)—that is intended to provide guidance in evaluating localized effects from emissions generated by a project. Following is a summary by sector of the assumptions used for the city's criteria air pollutant emissions inventory and the General Plan update analysis.

- **Transportation.** Transportation emissions forecasts were modeled using emissions data from CARB's EMFAC2017 web database (v. 1.0.7). Additionally, the SAFE Vehicle Part One Rule adjustment factors for NO, CO, PM_{10}, and $PM_{2.5}$ were applied for light duty vehicles (i.e., LDA, LDT1, LDT2, and MDV) per CARB guidance for year 2045 emissions (CARB 2019b). Model runs were based on daily per-capita VMT data provided by IBI Group (see Appendix K) and calendar year 2020 (existing) and 2045 emission rates.[13] The VMT is based on the "origin-destination" approach and assumes the full trip length for vehicle trips that occur entirely within the city (i.e., internal-internal trips). For external-internal/internal-external trips, the trip lengths are based on the destinations/attractions near the boundary assumed in the Orange County Transportation Authority traffic model in addition to the likely attractions/destinations beyond the immediate developments near the boundary limit.

[13] The Year 2045 inventory represents the projected emissions that the existing land uses would generate in the future, using year 2045 emission factors for on-road vehicles. To isolate the impacts related to the change in land uses proposed under the General Plan update, emissions related to the update will be based on the difference in emissions generated by the existing and proposed land uses under year 2045 conditions. This approach is taken because existing land uses would be subject to regulations that come into effect in the future that reduce mobile-source emissions. Thus, the level of emissions the existing land uses generate today would not be generated in perpetuity, but would be affected by these state regulations.

- **Energy.** Emissions associated with natural gas use for residential and nonresidential land uses in the city were modeled based on data provided by SCE for years 2012 through 2018 and by SoCalGas for years 2014 to 2018. Forecasts are adjusted for increases in population and employment in the city.

- **Off-Road Equipment.** Calendar year 2020 emission rates for Orange County were obtained from CARB's OFFROAD2017 web database (v. 1.0.1) and were used to estimate criteria air pollutant emissions from light commercial and construction equipment in the city. OFFROAD2017 is a database of equipment use and associated emissions for each county compiled by CARB. In order to determine the percentage of emissions attributable to the city, light commercial equipment is estimated based on employment for Santa Ana as a percentage of Orange County. Construction equipment use is estimated based on building permit data for Santa Ana and Orange County and from data compiled by the US Census. The light commercial equipment emissions forecast is adjusted for changes in employment in the city. It is assumed that construction emissions for the forecast year would be similar to historical levels. Annual emissions are derived by multiplying daily emissions by 365 days.

- **Area Sources.** Area sources are based on CalEEMod defaults for emissions generated from use of consumer products and cleaning supplies.

5.2.4.2 IMPACTS OF THE ENVIRONMENT ON A PROJECT

Buildout of the proposed land use plan under the General Plan update could result in sensitive uses (e.g., residential) near sources of emissions (e.g., freeways, industrial uses). Sensitive land uses may be located within close proximity to I-5, SR-22, and SR-55 and may be exposed to elevated levels of DPM. Developing new sensitive land uses near sources of emissions could expose persons that inhabit these sensitive land uses to potential air quality–related impacts. However, the purpose of this environmental evaluation is to identify the significant effects of the proposed project on the environment, not the significant effects of the environment on the proposed project. See *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369 (Case No. S213478). Thus, CEQA does not require analysis of the potential environmental effects from siting sensitive receptors near existing sources, and this type of analysis is not provided in Section 5.2.4.3, *Impact Analysis*. Though it is generally not within the purview of CEQA to analyze impacts of the environment on a project, the General Plan update includes the following policies to minimize air quality impacts and achieve appropriate health standards:

Community Element

- **Policy 3.2 Healthy Neighborhoods.** Continue to support the creation of healthy neighborhoods by addressing public safety, improving the built environment, and maintaining building code standards.

Conservation Element

- **Policy 1.1 Regional Planning Efforts.** Coordinate air quality planning efforts with local and regional agencies to meet State and Federal ambient air quality standards in order to protect all residents from the health effects of air pollution.

- **Policy 1.2 Climate Action Plan.** Consistency with emission reduction goals highlighted in the Climate Action Plan shall be considered in all major decisions on land use and investments in public infrastructure.

- **Policy 1.5 Sensitive Receptor Decisions.** Consider potential impacts of stationary and non-stationary emission sources on existing and proposed sensitive uses and opportunities to minimize health and safety risks.

Land Use Element

- **Policy 3.8 Sensitive Receptors.** Avoid the development of sensitive receptors in close proximity to land uses that pose a hazard to human health and safety, due to the quantity, concentration, or physical or chemical characteristics of the hazardous materials that they utilize, or the hazardous waste that they generate or emit.

- **Policy 3.9 Improving Health.** Improve the health of residents by discontinuing the operation of noxious, hazardous, dangerous, and polluting uses that are in close proximity to sensitive receptors

Safety Element

- **Policy 2.3 Transportation and Storage.** Coordinate with the County of Orange, the California Department of Transportation, and other relevant parties to enforce state and local laws regulating the storage and transport of hazardous materials within the City of Santa Ana, and limit truck routes through the City to arterials streets away from natural habitats and sensitive land uses.

- **Policy 2.6 Existing Sensitive Uses.** Partner and collaborate with property owners, businesses, and community groups to develop strategies to protect and minimize risks from existing hazardous material sites to existing nearby sensitive uses.

5.2.4.3 IMPACT ANALYSIS

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

Impact 5.2-1: The additional population growth forecast for the General Plan update and the associated emissions would not be consistent with the assumptions of the air quality management plan. [Threshold AQ-1]

The following describes potential air quality impacts of consistency with the AQMP from the implementation of the proposed General Plan Update.

The South Coast AQMD is directly responsible for reducing emissions from area, stationary, and mobile sources in the SoCAB to achieve the National and California AAQS and has responded to this requirement by preparing an AQMP. On March 3, 2017, the South Coast AQMD Governing Board adopted the 2016 AQMP, which is a regional and multiagency effort (South Coast AQMD, CARB, SCAG, and EPA). A consistency determination with the AQMP plays an important role in local agency project review by linking local planning

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

The two principal criteria for conformance with an AQMP are:

1. Whether the project would exceed the assumptions in the AQMP.

2. Whether the project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timeline attainment of air quality standards.

SCAG is South Coast AQMD's partner in the preparation of the AQMP, providing the latest economic and demographic forecasts and developing transportation measures. Regional population, housing, and employment projects developed by SCAG are based, in part, on a city's general plan land use designations. These projections form the foundation for the emissions inventory of the AQMP and are incorporated into the Connect SoCal Plan, which is the 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) prepared by SCAG to determine priority transportation projects and vehicle miles traveled in the SCAG region (SCAG 2020a). Because the AQMP strategy is based on projections from local general plans, projects that are consistent with the local general plan are considered consistent with the air quality–related regional plan. Additionally, only large projects have the potential to substantially affect the demographic forecasts in the AQMP.

Criterion 1

Table 5.2-9, *Comparison of Population and Employment Forecast*, compares the population and employment growth forecast under the General Plan update to the existing conditions and projections based on SCAG forecasts.

Table 5.2-9 Comparison of Population and Employment Forecast

Scenario	Existing Land Uses	SCAG 2045 Forecast[1]	Proposed General Plan 2045	Change from Existing	Increase Compared to the SCAG Forecast
Population[2]	334,774	360,100	431,629	96,855	71,529
Employment[2]	158,980	172,400	170,416	11,436	-1,984
Adjusted SP[3]	460,686	496,641	566,598	105,912	69,958
VMT[4]	11,407,124	N/A	11,518,959	111,835	N/A
VMT/SP	24.8	N/A	20.3	-4.4	N/A

Note: SP = Service Population (population plus employees)

1 Source: SCAG 2020b.

2 While, the traffic study uses both population and employment based on OCTAM 2016 baseline (interpolated for year 2020) and the 2045 forecasts, population and employment used for air quality is based on the land use statistics in Table 3-7 and Table 3-8.

3 Service population (SP) consists of the aggregate of total employees and population within the study area. When aggregating employees and residents for transportation efficiency, an employee reduction factor was applied to account for overlaps in the two (employees who are also residents). Reduction factors were applied to both the City of Santa Ana employees then aggregated to the resident population. Reduction factors are based on employment data within the SCAG Local Profiles Reports (2019) for the City of Santa Ana. The SCAG reports show that 20.8 percent of employees within the City are also residents of the City (IBI 2020).

4 Source: Appendix K – IBI Traffic Impact Analysis.

As shown in Table 5.2-9, the General Plan Update would result in a higher population and generate slightly fewer employees for the City compared to SCAG forecasts. It should be noted that the growth projected by SCAG is based on demographic trends in the region and on the current General Plan. These demographic trends are incorporated into the RTP/SCS to determine priority transportation projects and VMT in the SCAG region. The growth projections in SCAG's RTP/SCS and the associated emissions inventory in South Coast AQMD's AQMP do not include the additional growth forecast in the General Plan Update.. Once the General Plan Update is adopted and the AQMP is revised, SCAG and South Coast AQMD will incorporate the updated growth projections into their regional planning projections, and the General Plan Update would become consistent with the AQMP. However, since the AQMP is based on the current General Plan the proposed project (General Plan Update) which would accommodate increased growth and related emissions would not be consistent with the AQMP under the first criterion.

Criterion 2

The SoCAB is designated nonattainment for O_3 and $PM_{2.5}$ under the California and National AAQS, nonattainment for lead (Los Angeles County only) under the National AAQS, and nonattainment for PM_{10} under the California AAQS (CARB 2015). Because the General Plan update involves long-term growth associated with buildout of the city, cumulative emissions generated from operation of individual development projects would exceed the South Coast AQMD regional and localized thresholds (see Impact 5.2-2 and Impact 5.2-3). Consequently, emissions generated by development projects in addition to existing sources in the city are considered to cumulatively contribute to the nonattainment designations of the SoCAB. Buildout of the proposed land use plan associated with the General Plan update could contribute to an increase in frequency or severity of air quality violations and delay attainment of the AAQS or interim emission reductions in the AQMP, and emissions generated from buildout would result in a significant air quality impact. Therefore, the General Plan update would not be consistent with the AQMP under the second criterion.

Summary

Buildout of the General Plan update would exceed current population estimates for the city, and therefore the emissions associated with the additional population are not included in the current regional emissions inventory for the SoCAB. Additionally, air pollutant emissions associated with buildout of the General Plan update would cumulatively contribute to the nonattainment designations in the SoCAB. Therefore, overall, the General Plan update would be inconsistent with the AQMP.

Level of Significance Before Mitigation: Potentially significant.

Impact 5.2-2: Construction activities associated with future development that would be accommodated under the General Plan update could generate short-term emissions in exceedance of the South Coast Air Quality Management District's threshold criteria. [Threshold AQ-2]

Construction activities would temporarily increase PM_{10}, $PM_{2.5}$, VOC, NO_X, SO_X, and CO regional emissions within the SoCAB. The primary source of NO_X, CO, and SO_X emissions is the operation of construction equipment. The primary sources of particulate matter (PM_{10} and $PM_{2.5}$) emissions are activities that disturb the soil, such as grading and excavation, road construction, and building demolition and construction. The primary

sources of VOC emissions are the application of architectural coating and off-gas emissions associated with asphalt paving. A discussion of health impacts associated with air pollutant emissions generated by construction activities is included under "Air Pollutants of Concern" in Section 5.2.1.1, *Regulatory Framework*.

Construction activities associated with the General Plan update would occur over the buildout horizon of the plan, causing short-term emissions of criteria air pollutants. However, information regarding specific development projects, soil types, and the locations of receptors would be needed in order to quantify the level of impact associated with construction activity. Due to the scale of development activity associated with buildout of General Plan update, emissions would likely exceed the South Coast AQMD regional significance thresholds. In accordance with the South Coast AQMD methodology, emissions that exceed the regional significance thresholds would cumulatively contribute to the nonattainment designations of the SoCAB. The SoCAB is designated nonattainment for O_3 and particulate matter (PM_{10} and $PM_{2.5}$). Emissions of VOC and NO_X are precursors to the formation of O_3. In addition, NO_X is a precursor to the formation of particulate matter (PM_{10} and $PM_{2.5}$). Therefore, the General Plan update would cumulatively contribute to the nonattainment designations of the SoCAB for O_3 and particulate matter (PM_{10} and $PM_{2.5}$).

Air quality emissions related to construction must be addressed on a project-by-project basis. For the General Plan update, which is a broad-based policy plan, it is not possible to determine whether the scale and phasing of individual projects would exceed the South Coast AQMD's short-term regional or localized construction emissions thresholds. In addition to regulatory measures—e.g., South Coast AQMD Rule 201 for a permit to operate, Rule 403 for fugitive dust control, Rule 1113 for architectural coatings, Rule 1403 for new source review, and CARB's Airborne Toxic Control Measures—mitigation imposed at the project level may include extension of construction schedules and/or use of special equipment.

Furthermore, the General Plan update includes Policies 3.8 and 3.9 from the land use element, which would avoid development of sensitive receptors near land uses that may generate hazardous materials and discontinuing operations of facilities that are close to these receptors, respectively.

While individual projects accommodated under the General Plan update may not exceed the South Coast AQMD regional significance thresholds, the likely scale and extent of construction activities associated with the General Plan update would likely continue to exceed the relevant South Coast AQMD thresholds for some projects. Therefore, construction-related regional air quality impacts of developments that would be accommodated by the General Plan update would be potentially significant.

Level of Significance Before Mitigation: Potentially significant.

Impact 5.2-3: Implementation of the General Plan update would generate long-term emissions in exceedance of South Coast AQMD's threshold criteria. [Threshold AQ-2]

It is important to note that, per the requirements of CEQA, this analysis is based on a comparison between the General Plan update's proposed land-use plan and the existing, on-the-ground land uses—not the current General Plan land-use plan (see figure 3-6 and 3-7).

It is also important to note that the General Plan update sets up the framework for growth and development and does not directly result in development. Before development can occur, it must be analyzed for conformance with the General Plan, zoning requirements, and other applicable local and State requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits.

The General Plan update guides growth and development in the city by designating allowed land uses by parcel and through implementation of its goals and policies. New development would increase air pollutant emissions in the city and contribute to the overall emissions in the SoCAB. A discussion of health impacts associated with air pollutant emissions generated by operational activities is included under "Air Pollutants of Concern" in Section 5.2.1.1, *Regulatory Framework*.

General Plan Update Criteria Air Pollutant Emissions Forecast

The emissions inventory for the city under the General Plan update is shown in Table 5.2-10. As shown in the table, implementation of the General Plan update would increase criteria air pollutant emissions compared to existing conditions. This increase is based on the difference between existing land uses and land uses associated with buildout of the General Plan update as well as an estimate of population and employment in the city in year 2045. Buildout of the General Plan update would generate long-term emissions that exceed the daily South Coast AQMD thresholds for VOC, NO_X, and CO. Emissions of VOC and NO_X are precursors to the formation of O_3. In addition, NO_X is a precursor to the formation of particulate matter (PM_{10} and $PM_{2.5}$). Therefore, emissions of VOC and NO_X that exceed the South Coast AQMD regional significance thresholds would contribute to the O_3 and particulate matter (PM_{10} and $PM_{2.5}$) nonattainment designation of the SoCAB.

Table 5.2-10 General Plan Update Horizon Year 2045 Regional Criteria Air Pollutant Emissions Forecast

Sector	Criteria Air Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Existing Land Uses at Buildout Year 2045						
Transportation[1]	355	2,232	13,143	59	1,296	532
Energy	144	1,277	845	8	100	100
Area – Consumer Products[2]	4,212	0	0	0	0	0
Area –Light Commercial Equipment[3]	154	415	6,330	0.96	38	31
Area – Construction Equipment	28	182	589	0	13	11
Existing Land Uses Total	**4,893**	**4,106**	**20,907**	**69**	**1,447**	**673**
Proposed Land Use Plan – Forecast Year 2045						
Transportation[1]	359	2,254	13,272	60	1,309	537
Energy	180	1,583	997	9.80	124	124
Area – Consumer Products[2]	6,156	0	0	0	0	0
Area –Light Commercial Equipment[3]	165	445	6,786	1	41	33
Area – Construction Equipment	28	182	589	0	13	11
Proposed Land Use Plan Total	**6,888**	**4,463**	**21,643**	**71**	**1,487**	**705**

Table 5.2-10 General Plan Update Horizon Year 2045 Regional Criteria Air Pollutant Emissions Forecast

Sector	Criteria Air Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Increase in Emissions	1,994	357	736	3	40	32
South Coast AQMD Regional Significance Threshold	55	55	550	150	150	55
Significant?	**Yes**	**Yes**	**Yes**	No	No	No

Note: Emissions forecasts estimated based on changes in households (residential energy, area), employment (nonresidential energy, area), or service population (transportation).

[1] EMFAC2017 Version 1.0.2. Based on daily VMT provided by IBI Group. Transportation sector includes the full trip length for internal-internal trips and various trip lengths for external-internal/internal-external trips (see Appendix J). VMT per year based on a conversion of VMT x 347 days per year to account for less travel on weekend, consistent with CARB statewide GHG emissions inventory methodology (CARB 2008). The CARB adjustment factors to account for the SAFE Vehicle Rule Part One are incorporated for year 2045 emissions (CARB 2019b).

[2] Based on CalEEMod, Version 2016.3.2, methodology utilized to calculate VOC emissions from use of household consumer cleaning products.

[3] OFFROAD2017 Version 1.0.1. Light commercial equipment emissions estimated based on employment for the City of Santa Ana as a percentage of Orange County. Construction emissions estimated based on housing permit data for Orange County and Santa Ana from the US Census. Area sources exclude emissions from fireplaces.

General Plan Policies That May Reduce Air Quality Emissions

Implementation of the General Plan Update policies could contribute to reducing criteria air pollutant emissions. Policy 1.1 of the conservation element would require compliance with State and federal AAQS to protect residents from the health effects of air pollution. In addition, the conservation and circulation elements includes goals and policies that would aid in controlling emissions generated in the city. These policies focus on minimizing health and safety risks on sensitive receptors by controlling emissions from new development and reducing VMT by increasing public and active transit and through land use planning.

- **Conservation Element, Goal 1.** Protect air resources, improve regional and local air quality, and minimize the impacts of climate change. (Policies 1.1 through 1.14)
- **Circulation Element, Goal 1.** A comprehensive and multimodal circulation system that facilitates the safe and efficient movement of people, enhances commerce, and promotes a sustainable community. (Policies 1.7 and 1.8)
- **Circulation Element, Goal 4.** Coordinated transportation planning efforts with land use and design strategies that encourage sustainable development and achieve broader community goals. (Policies 4.1, 4.3, 4.5, 4.6 and 4.9)
- **Circulation Element, Goal 1.** A transportation system that is attractive, safe, and state-of-the-art and supports community, environmental, and conservation goals. (Policies 5.4 and 5.6)

Furthermore, the Land Use Element Policies 1.6, 1.7, 2.5, 2.10 and 4.1 as well as the Urban Design Element Policies 1.6, 3.10, and 5.4 promote an increase in concepts and designs that would increase active transportation like walking and bicycling as well as use of public transit to mitigate air quality impacts. In addition, transportation demand management policies would contribute to reduced VMT.

However, future development projects that would be accommodated by the General Plan update could exceed the South Coast AQMD regional emissions thresholds. Therefore, operational air quality impacts associated with future development of the General Plan update would be significant.

Level of Significance Before Mitigation: Potentially significant.

Impact 5.2-4: Operation of industrial and warehousing land uses accommodated under the General Plan Update could expose sensitive receptors to substantial toxic air contaminant concentrations. [Threshold AQ-3]

Development and operation of new land uses accommodated under the proposed land use plan could generate new sources of TACs in the City from area/stationary sources and mobile sources.

Permitted Stationary Sources

The majority of additional non-residential growth in the City would be from office and commercial uses. Industrial areas slated for land use change would become Industrial/Flex, which would allow for office land uses alongside industrial uses. Areas intended for conventional industrial uses would be minimal and would be offset by the reduction in industrial uses around the SR-55 freeway and Dyer Road. Various industrial and commercial processes (e.g., manufacturing, dry cleaning) allowed under the proposed land use plan would be expected to release TACs. Industrial land uses, such as chemical processing facilities, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities, have the potential to be substantial stationary sources that would require a permit from South Coast AQMD. Emissions of TACs would be controlled by South Coast AQMD through permitting and would be subject to further study and health risk assessment prior to the issuance of any necessary air quality permits under South Coast AQMD Rule 1401. Though the General Plan Update includes policies in the conservation element to reduce exposure of sensitive receptors to pollution (e.g., Policy 1.5), emissions cannot be determined or modeled until specific development projects are proposed. Therefore, implementation of the General Plan Update may result in projects that emit TACs throughout the city and result in potentially significant localized air quality impacts.

Nonpermitted Sources

Mobile sources of TACs are not regulated by South Coast AQMD. New warehousing operations permitted within the proposed areas designated Industrial and Industrial/Flex could generate substantial DPM emissions from off-road equipment use and truck idling. Some warehousing and industrial facilities may also use transport refrigeration units for cold storage. New land uses in the city that are permitted under the General Plan Update that use trucks, including trucks with transport refrigeration units, could generate an increase in DPM that would contribute to cancer and noncancer health risk in the SoCAB. These types of facilities could also generate PM_{10} and $PM_{2.5}$ that could cause an exceedance or contribute to the continuing exceedance of the federal and State AAQS. These new land uses could be near existing sensitive receptors. In addition, trucks would travel on regional transportation routes through the SoCAB, contributing to near-roadway DPM concentrations.

Implementation of Policy 2.3 of the safety element calls for coordination with relevant parties to enforce State and local laws to regulate storage and transport of hazardous materials, and limitations on truck routes through

the city to avoid sensitive areas (e.g., residences and schools). This policy would help minimizing exposure of sensitive receptors to substantial concentrations of TACs. Policy 1.1 of the conservation element (requirement to comply with State and federal AAQS to protect residents from the health effects of air pollution) and Policy 3.9 of the land use element (discontinue operation of noxious, hazardous, dangerous, and polluting uses that are in close proximity to sensitive receptors) would also contribute to minimizing exposure of sensitive receptors to substantial TAC concentrations.

As noted above, areas intended for conventional industrial uses would be minimal and would be offset by the reduction in industrial uses around the SR-55 freeway and Dyer Road. However, existing residences are close to existing and planned Industrial and Industrial/Flex areas in the City. As identified in the Figure 3-7, *Proposed Land Use Plan*, industrial areas are proximate to residential areas in several areas of the City including:

- Main Street
- Fairview Street
- Flower Street
- Grand Avenue
- Warner Avenue

These areas are within 200 feet of sensitive receptors. Until specific future development projects are proposed, the associated emissions and concentrations cannot be determined or modeled. Therefore, health risk impacts from development of industrial and commercial land uses are considered potentially significant.

Level of Significance Before Mitigation: Potentially significant.

Impact 5.2-5: Development and operation of land uses accommodated by the General Plan Update could generate emissions that exceed the localized significance thresholds and expose sensitive receptors to substantial concentrations of criteria air pollutants. [Threshold AQ-3]

New land uses consistent with the land use plan of the proposed General Plan update would generate new sources of criteria air pollutants in the city from area/stationary sources and mobile sources.

Localized Significance Thresholds

Implementation of the General Plan update could expose sensitive receptors to elevated pollutant concentrations during construction activities if it would cause or contribute significantly to elevating those levels. Unlike mass of emissions shown in Table 5.2-10 and described in pounds per day, localized concentrations refer to an amount of pollutant in a volume of air (ppm or $\mu g/m^3$) and can be correlated to potential health effects. LSTs are the amount of project-related emissions at which localized concentrations (ppm or $\mu g/m^3$) would exceed the AAQS for criteria air pollutants for which the SoCAB is in nonattainment.

Operation LSTs

The types of land uses that could generate substantial amounts of stationary source emissions include industrial land uses, which are accommodated under the General Plan update (see Figure 3-7, *Proposed General Plan Land*

Use Plan). But implementation of General Plan update policies could contribute to reducing criteria air pollutant emissions.

Goal 1 of the conservation element would aim to protect air resources, improve regional and local air quality, and minimize the impacts of climate change. In addition, Policy 1.1 of the conservation element would require compliance with State and federal AAQS to protect residents from the health effects of air pollution. Furthermore, as previously mentioned under Impact 5.2-3, the conservation, land use, and urban design elements include polices that would contribute to controlling emissions generated in the city and would promote concepts and designs that would increase walking, bicycling, and use of public transit in addition to transportation demand management policies, which would contribute to reduced VMT.

The aforementioned policies of the General Plan update would contribute to minimizing localized operation-related emissions, to the extent possible, from individual land use development projects accommodated in the proposed land use plan. However, per the LST methodology, information regarding specific development projects and the locations of receptors would be needed in order to quantify the levels of localized operation and construction-related impacts associated with future development projects. Thus, because the proposed General Plan update is a broad-based policy plan and does not itself propose specific development projects, it is not possible to calculate individual project-related operation emissions at this time. Overall, because of the likely scale of future development and the inclusion of industrial uses that would be accommodated by the General Plan update, some development projects could likely exceed the LSTs. Therefore, localized operation-related air quality impacts associated with implementation of the General Plan update are considered potentially significant.

Construction LSTs

Buildout of the General Plan update would occur over approximately 25 years or longer via several smaller projects, each with its own construction time frame and equipment. Because an LST analysis can only be conducted at a project-level, quantification of LSTs is not applicable for the program-level environmental analysis of the General Plan update. Because potential development and redevelopment could occur close to existing sensitive receptors, future development projects that would be accommodated by the General Plan update have the potential to expose sensitive receptors to substantial pollutant concentrations. Construction equipment exhaust combined with fugitive particulate matter emissions have the potential to expose sensitive receptors to substantial concentrations of criteria air pollutant emissions and result in a significant impact.

CO Hotspots

Areas of vehicle congestion have the potential to create pockets of CO called hotspots. In 2007, the SoCAB was designated in attainment for CO under both the California AAQS and National AAQS. The CO hotspot analysis conducted for the attainment by South Coast AQMD did not predict a violation of CO standards at the busiest intersections in Los Angeles during the peak morning and afternoon periods.[14] As identified in

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

South Coast AQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide, peak carbon monoxide concentrations in the SoCAB in the years before redesignation were a result of unusual meteorological and topographical conditions and not of congestion at a particular intersection (South Coast AQMD 1992, 2003).

Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (BAAQMD 2017). Buildout of the General Plan update would not result in the increase in traffic volume required to generate a CO hotspot. Therefore, CO hotspots impacts would be less than significant.

Summary

Localized operation-related air quality impacts associated with implementation of the General Plan update are considered potentially significant. Construction equipment exhaust combined with fugitive particulate matter emissions have the potential to expose sensitive receptors to substantial concentrations of criteria air pollutant emissions and would result in a significant impact. Because buildout of the General Plan update would not result in the increase in traffic volume required to generate a CO hotspot, impacts would be less than significant.

Level of Significance Before Mitigation: Potentially significant.

Impact 5.2-6: Industrial land uses accommodated under the General Plan update could create other emissions, such as those leading to objectionable odors, that would adversely affect a substantial number of people. [Threshold AQ-4]

Growth within the city under the General Plan update could generate new sources of odors. Nuisance odors from land uses in the SoCAB are regulated under South Coast AQMD Rule 402, Nuisance, which states:

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

Industrial and South Coast AQMD–Permitted Land Uses

Industrial land uses have the potential to generate objectionable odors. Examples of industrial projects are wastewater treatment plants, compost facilities, landfills, solid-waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch manufacturing plants, chemical manufacturing, and food manufacturing facilities.

Areas where these types of uses could be developed under the General Plan update would be generally limited to the areas designated as industrial and are primarily found along State Route 55, which is a major corridor, and in the southwest corner of the city (see Figures 3-5 and 3-6). Industrial land uses associated with the

General Plan update would be required to comply with South Coast AQMD Rule 402, but additional measures may be necessary to prevent an odor nuisance. Therefore, industrial land uses associated with the General Plan update may generate potentially significant odor impacts for a substantial number of people.

Residential and Other Land Uses

Residential and other nonresidential, nonindustrial land uses that would be accommodated by the General Plan update could result in the generation of odors such as exhaust from landscaping equipment and from cooking. However, unlike industrial land uses, these are not considered potential generators of odor that could affect a substantial number of people. Furthermore, nuisance odors are regulated under South Coast AQMD Rule 402, which requires abatement of any nuisance generating a verified odor complaint. Therefore, impacts from potential odors generated from residential and other nonresidential land uses associated with the General Plan update are considered less than significant.

Construction

During construction activities of development projects that would be accommodated by the General Plan update, construction equipment exhaust and application of asphalt and architectural coatings would temporarily generate odors. However, any construction-related odor emissions would be temporary and intermittent. Additionally, noxious odors would be confined to the immediate vicinity of the construction equipment in use. By the time such emissions reached any sensitive receptor sites, they would be diluted to well below any level of air quality concern. Furthermore, short-term construction-related odors are expected to cease upon the drying or hardening of odor-producing materials. Therefore, impacts associated with construction-generated odors are considered less than significant.

Summary

Industrial land uses associated with the General Plan update may generate potentially significant odor impacts for a substantial number of people. Impacts from potential odors generated from residential and other nonresidential land uses associated with the General Plan update are considered less than significant. Impacts associated with construction-generated odors are considered less than significant.

Level of Significance Before Mitigation: Potentially significant.

5.2.5 Level of Significance Before Mitigation

Without mitigation, the following impacts would be **potentially significant**:

- **Impact 5.2-1** The additional population growth forecasted for the General Plan update and the associated emissions would not be consistent with the assumptions of the Air Quality Management Plan.
- **Impact 5.2-2** Construction activities associated with future development that would be accommodated under the General Plan update could generate short-term emissions in exceedance of South Coast AQMD'S threshold criteria.

- **Impact 5.2-3** Implementation of the General Plan update would generate long-term emissions in exceedance of South Coast AQMD's threshold criteria.
- **Impact 5.2-4** Operation of industrial and warehousing land uses accommodated under the General Plan update could expose sensitive receptors to substantial toxic air contaminant concentrations.
- **Impact 5.2-5** Development and operation of land uses accommodated by the General Plan update could generate emissions that exceed the LSTs and expose sensitive receptors to substantial criteria air pollutant concentrations.
- **Impact 5.2-6** Industrial land uses accommodated under the General Plan update could create other emissions, such as those leading to objectionable odors, that would adversely affect a substantial number of people.

5.2.6 Mitigation Measures

Impact 5.2-1

When incorporated into future development projects for operation and construction phases, the mitigation measures outlined for Impacts 5.2-2 and 5.2-3, described below, would contribute to reduced criteria air pollutant emissions associated with buildout of the General Plan update. Additionally, goals and policies in the General Plan update would promote increased capacity for alternative transportation modes, implementation of transportation demand management strategies, and energy efficiency. However, no further mitigation measures are available that would reduce impacts to below South Coast AQMD significance thresholds due to the magnitude of growth and associated emissions that would be generated by the buildout of the General Plan update.

Impact 5.2-2

AQ-1 Prior to discretionary approval by the City of Santa Ana for development projects subject to CEQA (California Environmental Quality Act) review (i.e., non-exempt projects), project applicants shall prepare and submit a technical assessment evaluating potential project construction-related air quality impacts to the City of Santa Ana for review and approval. The evaluation shall be prepared in conformance with South Coast Air Quality Management District (South Coast AQMD) methodology for assessing air quality impacts. If construction-related criteria air pollutants are determined to have the potential to exceed the South Coast AQMD's adopted thresholds of significance, the City of Santa Ana shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during construction activities. These identified measures shall be incorporated into all appropriate construction documents (e.g., construction management plans) submitted to the City and shall be verified by the City. Mitigation measures to reduce construction-related emissions could include, but are not limited to:

- Require fugitive-dust control measures that exceed South Coast AQMD's Rule 403, such as:
  - Use of nontoxic soil stabilizers to reduce wind erosion.
  - Apply water every four hours to active soil-disturbing activities.
  - Tarp and/or maintain a minimum of 24 inches of freeboard on trucks hauling dirt, sand, soil, or other loose materials.
- Use construction equipment rated by the United States Environmental Protection Agency as having Tier 3 (model year 2006 or newer) or Tier 4 (model year 2008 or newer) emission limits, applicable for engines between 50 and 750 horsepower.
- Ensure that construction equipment is properly serviced and maintained to the manufacturer's standards.
- Limit nonessential idling of construction equipment to no more than five consecutive minutes.
- Limit on-site vehicle travel speeds on unpaved roads to 15 miles per hour.
- Install wheel washers for all exiting trucks or wash off all trucks and equipment leaving the project area.
- Use Super-Compliant VOC paints for coating of architectural surfaces whenever possible. A list of Super-Compliant architectural coating manufactures can be found on the South Coast AQMD's website.

Impact 5.2-3

AQ-2 Prior to discretionary approval by the City of Santa Ana for development projects subject to CEQA (California Environmental Quality Act) review (i.e., non-exempt projects), project applicants shall prepare and submit a technical assessment evaluating potential project operation phase-related air quality impacts to the City of Santa Ana for review and approval. The evaluation shall be prepared in conformance with South Coast Air Quality Management District (South Coast AQMD) methodology in assessing air quality impacts. If operation-related air pollutants are determined to have the potential to exceed the South Coast AQMD's adopted thresholds of significance, the City of Santa Ana shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during operational activities. The identified measures shall be included as part of the conditions of approval. Possible mitigation measures to reduce long-term emissions could include, but are not limited to the following:

- For site-specific development that requires refrigerated vehicles, the construction documents shall demonstrate an adequate number of electrical service connections at loading docks for plug-in of the anticipated number of refrigerated trailers to reduce idling time and emissions.

- Applicants for manufacturing and light industrial uses shall consider energy storage and combined heat and power in appropriate applications to optimize renewable energy generation systems and avoid peak energy use.
- Site-specific developments with truck delivery and loading areas and truck parking spaces shall include signage as a reminder to limit idling of vehicles while parked for loading/unloading in accordance with California Air Resources Board Rule 2845 (13 CCR Chapter 10 § 2485).
- Provide changing/shower facilities as specified in Section A5.106.4.3 of the CALGreen Code (Nonresidential Voluntary Measures).
- Provide bicycle parking facilities per Section A4.106.9 (Residential Voluntary Measures) of the CALGreen Code.
- Provide preferential parking spaces for low-emitting, fuel-efficient, and carpool/van vehicles per Section A5.106.5.1 of the CALGreen Code (Nonresidential Voluntary Measures).
- Provide facilities to support electric charging stations per Section A5.106.5.3 (Nonresidential Voluntary Measures) and Section A5.106.8.2 (Residential Voluntary Measures) of the CALGreen Code.
- Applicant-provided appliances (e.g., dishwashers, refrigerators, clothes washers, and dryers) shall be Energy Star–certified appliances or appliances of equivalent energy efficiency. Installation of Energy Star–certified or equivalent appliances shall be verified by Building & Safety during plan check.
- Applicants for future development projects along existing and planned transit routes shall coordinate with the City of Santa Ana and Orange County Transit Authority to ensure that bus pad and shelter improvements are incorporated, as appropriate.

Impact 5.2-4

AQ-3 Prior to discretionary approval by the City of Santa Ana, project applicants for new industrial or warehousing development projects that 1) have the potential to generate 100 or more diesel truck trips per day or have 40 or more trucks with operating diesel-powered transport refrigeration units, and 2) are within 1,000 feet of a sensitive land use (e.g., residential, schools, hospitals, or nursing homes), as measured from the property line of the project to the property line of the nearest sensitive use, shall submit a health risk assessment (HRA) to the City of Santa Ana for review and approval. The HRA shall be prepared in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment and the South Coast Air Quality Management District. If the HRA shows that the incremental cancer risk and/or noncancer hazard index exceed the respective thresholds, as established by the South Coast AQMD at the time a project is considered, the project applicant will be required to identify and demonstrate that best available control technologies for toxics (T-BACTs),

including appropriate enforcement mechanisms, are capable of reducing potential cancer and noncancer risks to an acceptable level. T-BACTs may include, but are not limited to, restricting idling on-site, electrifying warehousing docks to reduce diesel particulate matter, or requiring use of newer equipment and/or vehicles. T-BACTs identified in the HRA shall be identified as mitigation measures in the environmental document and/or incorporated into the site plan.

Impact 5.2-5

Mitigation Measures AQ-1 and AQ-2 would also be applicable in reducing construction- and operation-related LST impacts.

Impact 5.2-6

AQ-4 Prior to discretionary approval by the City of Santa Ana, if it is determined that a development project has the potential to emit nuisance odors beyond the property line, an odor management plan shall be prepared by the project applicant and submitted to the City of Santa Ana for review and approval. Facilities that have the potential to generate nuisance odors include, but are not limited to:

- Wastewater treatment plants
- Composting, green waste, or recycling facilities
- Fiberglass manufacturing facilities
- Painting/coating operations
- Large-capacity coffee roasters
- Food-processing facilities

The odor management plan shall demonstrate compliance with the South Coast Air Quality Management District's Rule 402 for nuisance odors. The Odor Management Plan shall identify the best available control technologies for toxics (T-BACTs) that will be utilized to reduce potential odors to acceptable levels, including appropriate enforcement mechanisms. T-BACTs may include but are not limited to scrubbers (i.e., air pollution control devices) at the industrial facility. T-BACTs identified in the odor management plan shall be identified as mitigation measures in the environmental document prepared for the development project and/or incorporated into the project's site plan.

5.2.7 Level of Significance After Mitigation

Impact 5.2-1

The General Plan update would be inconsistent with the South Coast AQMD's AQMP because buildout under the plan would exceed the population estimates assumed for the AQMP and would cumulatively contribute to the nonattainment designations of the SoCAB. Incorporation of Mitigation Measures AQ-2 into future development projects for the operation phase would contribute to reduced criteria air pollutant emissions associated with buildout of the General Plan update. Additionally, goals and policies in the General Plan update

would promote increased capacity for alternative transportation modes and implementation of transportation demand management strategies. However, due to the magnitude and scale of the land uses that would be developed, no mitigation measures are available that would reduce operation and construction impacts below South Coast AQMD thresholds. In addition, the population and employment assumptions of the AQMP would continue to be exceeded until the AQMP is revised and incorporates the projections of the General Plan update. Therefore, Impact 5.2-1 would remain **significant and unavoidable**.

Impact 5.2-2

Buildout of the General Plan update would occur over a period of approximately 25 years or longer. Construction activities associated with buildout of the General Plan update could generate short-term emissions that exceed the South Coast AQMD'S significance thresholds during this time and cumulatively contribute to the nonattainment designations of the SoCAB. Implementation of Mitigation Measure AQ-1 would reduce criteria air pollutant emissions from construction-related activities to the extent feasible. However, construction time frames and equipment for site-specific development projects are not available at this time, and there is a potential for multiple development projects to be constructed at one time, resulting in significant construction-related emissions. Therefore, despite adherence to Mitigation Measure AQ-1, Impact 5.2-2 would remain **significant and unavoidable**.

Impact 5.2-3

Buildout in accordance with the General Plan update would generate long-term emissions that would exceed South Coast AQMD's regional significance thresholds and cumulatively contribute to the nonattainment designations of the SoCAB. Mitigation Measure AQ-2, in addition to the goals and policies of the General Plan update, would reduce air pollutant emissions to the extent feasible. The measures and policies covering topics such as expansion of the pedestrian and bicycle networks, promotion of public and active transit, and support to increase building energy efficiency and energy conservation would also reduce criteria air pollutants in the city. Further, as shown in Table 5.2-11, compared to existing baseline year conditions, emissions of NO_X, CO, and SO_X are projected to decrease from current levels despite growth associated with the General Plan update.

However, Impact 5.2-3 would remain **significant and unavoidable** due to the magnitude of the overall land use development associated with the General Plan update. Contributing to the nonattainment status would also contribute to elevating health effects associated with these criteria air pollutants. Reducing emissions would further contribute to reducing possible health effects related to criteria air pollutants.

It is speculative for this broad-based General Plan update to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment, since mass emissions are not correlated with concentrations of emissions, or how many additional individuals in the air basin would suffer health effects. South Coast AQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of air quality in the SoCAB, and at the present time it has not provided methodology to assess the specific correlation between mass emissions generated and the effect on health in order to address the issue raised in the *Friant Ranch* case.

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Ozone concentrations are dependent upon a variety of complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting ground-level ozone concentrations in relation to the National AAQS and California AAQS, it is not possible to link health risks to the magnitude of emissions exceeding the significance thresholds. To achieve the health-based standards established by the EPA, the air districts prepare air quality management plans that detail regional programs to attain the AAQS. However, because cumulative development within the city would exceed the regional significance thresholds, the proposed project could contribute to an increase in health effects in the basin until the attainment standards are met in the SoCAB.

Table 5.2-11 Net Change in Regional Criteria Air Pollutant Emissions from Existing Baseline

	Criteria Air Pollutant Emissions (pounds per day)					
Sector	**VOC**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Existing Land Uses – Existing Baseline						
Transportation[1]	831	5,596	25,067	90	1,362	602
Energy	144	1,277	845	8	100	100
Area – Consumer Products[2]	4,212	0	0	0	0	0
Area –Light Commercial Equipment, Portable Equipment[3]	154	415	6,330	1	38	31
Area – Construction Equipment	28	182	589	0	13	11.11
Total	**5,369**	**7,470**	**32,832**	**99**	**1,513**	**744**
Proposed Land Use Plan – Forecast Year 2045						
Transportation[1]	359	597	13,336	60	1,309	537
Energy	180	1,583	997	9.80	124	124
Area – Consumer Products[2]	6,156	0	0	0	0	0
Area –Light Commercial Equipment, Portable Equipment[3]	165	445	6,786	1	41	33
Area – Construction Equipment	28	182	589	0	13	11
Existing Land Uses Total	6,888	2,806	21,708	71	1,487	705
Increase in Emissions	1,519	-4,664	-11,124	-28	-26	-39
South Coast AQMD Regional Significance Threshold	55	55	550	150	150	55
Significant?	**Yes**	No	No	No	No	No

Note Emissions forecasts estimated based on changes in households (residential energy, area), employment (nonresidential energy, area), or service population (transportation).

1 EMFAC2017 Version 1.0.2. Based on daily VMT provided by IBI Group. Transportation sector includes the full trip length for internal-internal trips and various trip lengths for external-internal/internal-external trips (see Appendix J). VMT per year based on a conversion of VMT x 347 days per year to account for less travel on weekend, consistent with CARB statewide GHG emissions inventory methodology (CARB 2008). The CARB adjustment factors to account for the SAFE Vehicle Rule Part One are incorporated for year 2045 emissions (CARB 2019b).

2 Based on CalEEMod, Version 2016.3.2, methodology utilized to calculate VOC emissions from use of household consumer cleaning products.

3 OFFROAD2017 Version 1.0.1. Light commercial equipment emissions estimated based on employment for the City of Santa Ana as a percentage of Orange County. Construction emissions estimated based on housing permit data for Orange County and the City of Santa Ana from the US Census. Area sources exclude emissions from fireplaces.

Impact 5.2-4

Buildout of the General Plan update could expose sensitive receptors to substantial concentrations of toxic air contaminants. Buildout could result in new sources of criteria air pollutant emissions and/or TACs near existing or planned sensitive receptors. Review of development projects by South Coast AQMD for permitted sources of air toxics (e.g., industrial facilities, dry cleaners, and gasoline dispensing facilities) would ensure that health risks are minimized. Additionally, Mitigation Measure AQ-3 would ensure mobile sources of TACs not covered under South Coast AQMD permits are considered during subsequent project-level environmental review by the City of Santa Ana. Individual development projects would be required to achieve the incremental risk thresholds established by South Coast AQMD, and TACs would be less than significant.

However, implementation of the General Plan Update would generate TACs that could contribute to elevated levels in the air basin. While individual projects would achieve the project-level risk threshold of 10 per million, they would nonetheless contribute to the higher levels of risk in the SoCAB. Therefore, the General Plan update's cumulative contribution to health risk is **significant and unavoidable**.

Impact 5.2-5

Mitigation Measures AQ-1 and AQ-2 (applied for Impacts 5.2-2 and 5.2-3, respectively) would reduce the regional construction and operation emissions associated with buildout of the General Plan update and therefore also result in a reduction of localized construction- and operation-related criteria air pollutant emissions to the extent feasible. However, because existing sensitive receptors may be close to project-related construction activities and large emitters of on-site operation-related criteria air pollutant emissions, construction and operation emissions generated by individual development projects have the potential to exceed South Coast AQMD's LSTs. Impact 5.2-5 would remain **significant and unavoidable**.

Impact 5.2-6

The Industrial and Industrial Flex land uses are not anticipated to produce odors,[15] and Mitigation Measure AQ-4 would ensure that odor impacts are minimized and facilities would comply with South Coast AQMD Rule 402. Therefore, Impact 5.2-6 would be less than significant.

5.2.8 References

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[15] These land uses assume that the following land uses would not be permitted: wastewater treatment plants, compost facilities, landfills, solid-waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch manufacturing plants, chemical manufacturing, and food manufacturing facilities.

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5.3 BIOLOGICAL RESOURCES

This section of the Draft Program Environmental Impact Report (PEIR) discusses the potential impacts to biological resources within the City of Santa Ana and its sphere of influence (plan area) associated with the General Plan Update (GPU). This section includes a discussion of the biological resources of the existing environment that would be potentially altered by the GPU's implementation and the consistency of the GPU with established relevant policies.

The analysis in this section is based in part on the following technical memorandum:

- *Biological and Natural Resource Inventory and Assessment for the City of Santa Ana General Plan Update*, Carlson Strategic Land Solutions Inc. (CSLS), May 26, 2020.

A complete copy of this report is included in the technical appendices to this Draft PEIR (Volume II, Appendix D).

5.3.1 Environmental Setting

5.3.1.1 REGULATORY BACKGROUND

Local laws, regulations, plans, or guidelines related to biological resources that are potentially applicable to the proposed project are summarized below.

Federal and State Regulations

Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973, as amended, protects and conserves any species of plant or animal that is endangered or threatened with extinction, as well as the habitats where these species are found. "Take" of endangered species is prohibited under Section 9 of the FESA. "Take" means to "harass, harm, pursue, hunt, wound, kill, trap, capture, collect, or attempt to engage in any such conduct." Section 7 of the FESA requires federal agencies to consult with the US Fish and Wildlife Service (USFWS) on proposed federal actions that may affect any endangered, threatened, or proposed (for listing) species or critical habitat that may support the species. Section 4(a) of the FESA requires that critical habitat be designated by the USFWS "to the maximum extent prudent and determinable, at the time a species is determined to be endangered or threatened." This provides guidance for planners/managers and biologists by indicating locations of suitable habitat and where preservation of a particular species has high priority. Section 10 of the FESA provides the regulatory mechanism for incidental take of a listed species by private interests and nonfederal government agencies during lawful activities. Habitat conservation plans (HCP) for the impacted species must be developed in support of incidental take permits to minimize impacts to the species and formulate viable mitigation measures.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (MBTA) affirms and implements the United States' commitment to four international conventions—with Canada, Japan, Mexico, and Russia—to protect shared migratory bird resources. The MBTA governs the take, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. It prohibits the take, possession, import, export, transport, sale, purchase, barter, or offering of these items, except under a valid permit or as permitted in the implementing regulations. USFWS administers permits to take migratory birds in accordance with the MBTA.

Clean Water Act, Section 404

The United States Army Corps of Engineers (USACE) regulates discharge of dredged or fill material into "waters of the United States."[1] Any filling or dredging within waters of the United States requires a permit, which entails assessment of potential adverse impacts to USACE wetlands and jurisdictional waters and any mitigation measures that the USACE requires. Section 7 consultation with USFWS may be required for impacts to a federally listed species. If cultural resources may be present, Section 106 review may also be required. When a Section 404 permit is required, a Section 401 Water Quality Certification is also required from the Regional Water Quality Control Board (RWQCB).

Clean Water Act, Section 401 and 402

Section 401(a)(1) of the CWA specifies that any applicant for a federal license or permit to conduct any activity that may result in any discharge into navigable waters shall provide the federal permitting agency with a certification, issued by the state in which the discharge originates, that any such discharge will comply with the applicable provisions of the CWA. In California, the applicable RWQCB must certify that the project will comply with water quality standards. Permits requiring Section 401 certification include USACE Section 404 permits and National Pollutant Discharge Elimination System permits issued by the US Environmental Protection Agency under Section 402 of the CWA. These permits are issued by the applicable RWQCB. The City of Santa Ana is in the jurisdiction of the Santa Ana RWQCB (Region 8).

California Fish and Game Code, Section 1600

Section 1600 of the California Fish and Game Code requires a project proponent to notify the California Department of Fish and Wildlife (CDFW) of any proposed alteration of streambeds, rivers, and lakes. The intent is to protect habitats that are important to fish and wildlife. CDFW may review and place conditions on the project, as part of a Streambed Alteration Agreement, that address potentially significant adverse impacts within CDFW's jurisdictional limits.

1 "Waters of the United States," as applied to the jurisdictional limits of the Corps under the Clean Water Act, includes all waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the tide; all interstate waters, including interstate wetlands; and all other waters, such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds whose use, degradation, or destruction could affect interstate or foreign commerce; water impoundments; tributaries of waters; territorial seas; and wetlands adjacent to waters. The terminology used by Section 404 of the Clean Water Act includes "navigable waters," which is defined at Section 502(7) of the act as "waters of the United States, including the territorial seas."

California Endangered Species Act

The California Endangered Species Act (CESA) generally parallels the main provisions of the FESA and is administered by the CDFW. Its intent is to prohibit take and protect state-listed endangered and threatened species of fish, wildlife, and plants. Unlike its federal counterpart, CESA also applies the take prohibitions to species petitioned for listing (state candidates). Candidate species may be afforded temporary protection as though they were already listed as threatened or endangered at the discretion of the Fish and Game Commission. Unlike the FESA, CESA does not include listing provisions for invertebrate species. Under certain conditions, CESA has provisions for take through a 2081 permit or memorandum of understanding. In addition, some sensitive mammals and birds are protected by the state as "fully protected species." California "species of special concern" are species designated as vulnerable to extinction due to declining population levels, limited ranges, and/or continuing threats. This list is primarily a working document for the CDFW's California Natural Diversity Database (CNDDB), which maintains a record of known and recorded occurrences of sensitive species. Informally listed taxa are not protected per se, but warrant consideration in the preparation of biological resources assessments.

Natural Community Conservation Plan/Habitat Conservation Plan

The City of Santa Ana is not within a Natural Community Conservation Plan/Habitat Conservation Plan area. The Central and Coastal Orange County Natural Community Conservation and Habitat Conservation Plan (NCCP/HCP) is located to the east of the City. The City is not a signatory to the NCCP/HCP.

Local Regulations

Municipal Code

Santa Ana Municipal Code Chapter 33, Article VII, Regulation of the Planting, Maintenance, and Removal of Trees, establishes regulations and standards necessary to ensure that the city will realize the benefits provided by its urban forest.

5.3.1.2 EXISTING CONDITIONS

The 27.4-square-mile plan area encompasses the existing city limits and the sphere of influence (SOI). Topographically, elevations range from approximately 210 feet above mean sea level at the northeast corner of the plan area to 35 feet at the city's southern border. The climate in Santa Ana is typified by short, warm, arid, and clear summers and long, cool, and partly cloudy winters. Over the course of the year, the temperature typically varies from 45°F to 84°F and is rarely below 39°F or above 92°F (Weather Spark 2019).

Over the years, the city has been substantially disturbed by industrial, commercial, and residential activities, with lands within the city having primarily been converted to urban development. The Santa Ana Freeway (I-5) cuts through the northeastern section of the city. SR-55 generally defines the southwestern boundary of the city, and I-405 is just south of Santa Ana. The Santa Ana River runs through the western section of the city, and Santiago Creek runs in the northern section.

Due to urbanization, readily apparent resources such as natural habitat and wildlife are limited. Certain stretches of Santiago Creek offer undisturbed plant and wildlife environments. Some conserved land adjacent to the creek in the northeastern portion of the city contain coast live oak trees. Outside of these areas are only remnants of native habitats and vegetation communities. However, open space lands for park and recreational uses offer important opportunities for enjoyment of a rare urban resource. River View Golf Course, Willowick Golf Course, Centennial Regional Park, Angels Community Park, Heritage Park, and other community parks within the city boundaries contain maintained landscaped areas with ornamental vegetation.

Vegetation Communities

The biological and natural resource inventory began with a thorough investigation of available literature and databases regarding existing and known open space in the city's current General Plan, mapping sensitive habitats, special status plants, and wildlife species within the plan area. Seven vegetation communities were identified in the open space and vacant parcels in the plan area (see Figure 5.3-1, *Open Space Inventory*).

- **Riparian**. This community consists of willow species (*Salix* sp.), mulefat (*Baccharis salicifolia*), Fremont's cottonwood (*Populus fremontii*), elderberry (*Sambucus nigra*), and western sycamore (*Platanus racemosa*). Portions of the riparian community consists of white alder (*Alnus rhombifolia*), tree tobacco (*Nicotiana glauca*), castor bean (*Rincinus communis*), and eucalyptus trees (*Eucalyptus* sp.). This community is associated with Santiago Creek.

- **Unvegetated Streambed**. This community is associated with the natural bottom portion of the Santa Ana River and contains minimal amounts of vegetation or is void of vegetation completely.

- **Oak Woodland**. This community consists of primarily coast live oak trees (*Quercus agrifolia*). The understory consists of minimal nonnative grasses and bare ground. This community is found adjacent to Santiago Creek in the northeastern portion of the city.

- **Ornamental**. This community includes maintained landscaped areas. The ornamental vegetation is nonnative, and some of it is considered invasive. The ornamental habitat type includes shade trees, such as Peruvian pepper tree (*Schinus molle*), Brazilian pepper (*Schinus terebinthifolius*), and grass associated with the City parks, primarily Kentucky bluegrass (*Poa pratensis*). This vegetation community includes River View Golf Course, Willowick Golf Course, and other various community parks within the city boundaries. (See Figure 5.3-1 and Chapter 5.15, *Recreation*, Figure 5.15-1).

- **Ruderal**. This community is associated with areas that are heavily disturbed by human activities, such as demolition of existing structures, annual mowing, and dominance of nonnative and/or invasive species. The ruderal habitat type includes Russian thistle (*Salsola tragus*), mustard (*Brassica* sp.), cheeseweed (*Malva parviflora*), and large areas that are void of vegetation.

- **Disturbed**. This community is void of any vegetation.

- **Developed**. This community consists of General Plan–designated Open Space parcels that are developed with structures. This community includes the Fairhaven Memorial Park and Mortuary, the Santa Ana Zoo,

and the concrete-lined channels of the Santa Ana River and Santiago Creek. These areas consist of primarily built materials and are frequently maintained.

The biological and natural resource inventory identified a total of 499 parcels designated as Open Space land use within the city's boundaries. An additional 135 parcels were identified as vacant or contain natural resources but are not designated Open Space. An additional four parcels, consisting of 83.37 acres, were identified as vacant parcels outside of the city's boundaries but within the SOI. The SOI parcels include portions of the concrete-lined Santa Ana River on the southwestern SOI boundary (see Figure 5.3-1). Table 1 in the biological resources report provides a description of each parcel in the SOI (see Appendix D).

Focus Areas

Five focus areas have been identified as part of the General Plan Update. Natural resources for each focus area are:

- **South Main Street**. The South Main Street focus area does not contain any Open Space–designated parcels or vacant lots (see Figure 5 of Appendix D). The parcels in this focus area all consist of developed land.
- **Grand Avenue/17th Street**. The Grand Avenue/17th Street focus area has 2 parcels designated Open Space and 9 vacant parcels that are not designated Open Space (see Figure 6 of Appendix D). The parcels designated Open Space total 1.47 acres and are both associated with the railroad right-of-way.
- **West Santa Ana Boulevard**. The West Santa Ana Boulevard focus area has 28 parcels designated Open Space and no other vacant parcels (see Figure 7 of Appendix D). The parcels total 148.11 acres. The focus area includes the Willowick Golf Course, Angels Community Park, and a portion of the Santa Ana River.
- **SR-55/Dyer Road**. The SR-55/Dyer Road focus area has 7 parcels designated Open Space and 3 vacant parcels with other designations (see Figure 8 of Appendix D). The parcels total 6.22 acres and include the railroad right-of-way, vacant parcels with ruderal vegetation, and concrete channels.
- **South Bristol Street**. The South Bristol Street focus area has 10 parcels designated Open Space and no other vacant parcels (see Figure 9 of Appendix D). The parcels total 6.94 acres and include the railroad right-of-way, concrete channels, parking lot, underground channel/turf, and linear parks with ornamental vegetation.

The biological and natural resource inventory (see Appendix D) includes summary tables for each focus area that inventory Open Space–designated land use or vacant lots and identify the existing General Plan land use designation, the physical land use, vegetation community, acreage, and Assessor's Parcel Number.

Sensitive Resources

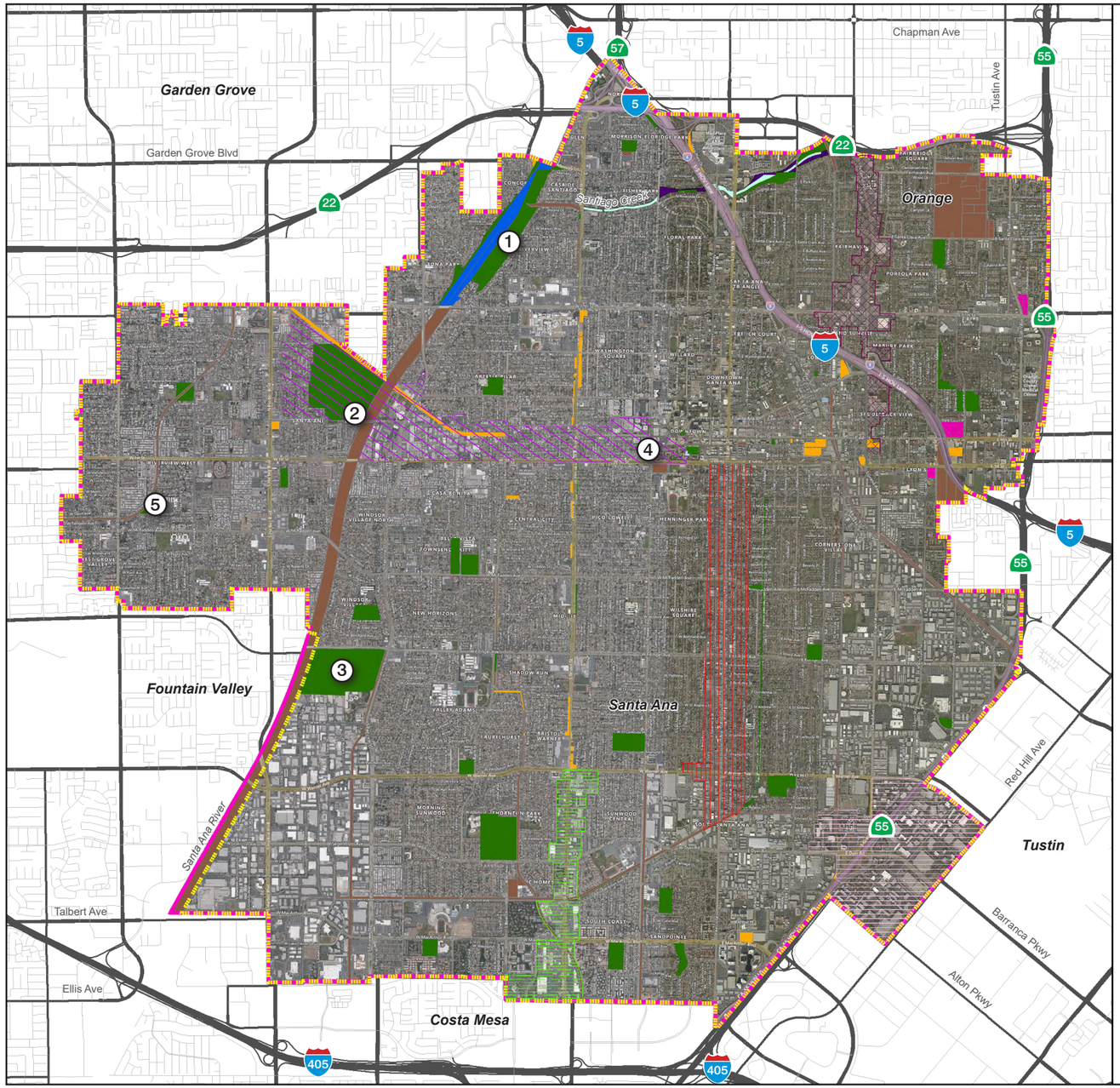
Several species of plants and animals in California have low populations and/or limited distributions. Such species may be considered rare and are vulnerable to extinction as the state's human population grows and the species' habitats are converted to agricultural and urban uses. As described more fully in Section 5.3.1.1, *Regulatory Background*, state and federal laws have provided CDFW and USFWS with a method for conserving

and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated "threatened" or "endangered" under state and federal endangered species acts. Others have been designated as candidates for such listing. Still others have been designated "species of special concern" by the CDFW. The California Native Plant Society has developed its own set of lists of native plants considered rare, threatened, or endangered. Collectively, these plants and animals are referred to as "special status species."

In addition to parcels identified within the city boundaries that are designated open space or that are identified as vacant or containing natural resources (not designated open space), an additional 4 parcels, consisting of 83.37 acres, were identified as vacant parcels outside of the city boundaries but within the SOI. The SOI parcels include vacant parcels on portions of the concrete-lined Santa Ana River in the southwestern part of the SOI. As discussed under "Vegetation Communities," above Santa Ana contains riparian habitat and oak woodland associated with Santiago Creek.

A review of the USFWS critical habitat mapper for threatened and endangered species shows that no critical habitat exists in Santa Ana (USFWS 2020a).

Figure 5.3-1 - Open Space Inventory



- City of Santa Ana
- Sphere of Influence

Working Focus Areas

- 55 Freeway/Dyer Rd
- Grand Avenue/17th Street
- South Main Street
- West Santa Ana Boulevard
- South Bristol Street

Habitat Conservation

- Riparian
- Unvegetated Streambed
- Oak Woodland
- Ornamental
- Ruderal
- Disturbed
- Developed

Parks

1. River View Golf Course
2. Willowick Golf Course
3. Centennial Regional Park
4. Angels Community Park
5. Heritage Park

0 1
Scale (Miles)

Source: Carlson Strategic Land Solutions, 2020

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Sensitive Plants

As discussed under "Vegetation Communities," Santa Ana contains oak woodland along Santiago Creek. A review of the CNDDB identified sensitive plants, shown in Table 5.3-1, within four quads that encompass Santa Ana—the Tustin, Orange, Anaheim, and Newport Beach quads.

Table 5.3-1 Sensitive Plant Species

Common Name	Scientific Name	Federal Status	State Status	CDFW Status	CA Rare Plant Rank
Allen's pentachaeta	*Pentachaeta aurea* ssp. *allenii*	None	None	-	1B.1
aphanisma	*Aphanisma blitoides*	None	None	-	1B.2
California box-thorn	*Lycium californicum*	None	None	-	4.2
California Orcutt grass	*Orcuttia californica*	Endangered	Endangered	-	1B.1
Catalina mariposa-lily	*Calochortus catalinae*	None	None	-	4.2
chaparral ragwort	*Senecio aphanactis*	None	None	-	2B.2
chaparral sand-verbena	*Abronia villosa* var. *aurita*	None	None	-	1B.1
coast woolly-heads	*Nemacaulis denudata* var. *denudata*	None	None	-	1B.2
Coulter's goldfields	*Lasthenia glabrata* ssp. *coulteri*	None	None	-	1B.1
Coulter's saltbush	*Atriplex coulteri*	None	None	-	1B.2
Davidson's saltscale	*Atriplex serenana* var. *davidsonii*	None	None	-	1B.2
decumbent goldenbush	*Isocoma menziesii* var. *decumbens*	None	None	-	1B.2
estuary seablite	*Suaeda esteroa*	None	None	-	1B.2
Gambel's water cress	*Nasturtium gambelii*	Endangered	Threatened	-	1B.1
Horn's milk-vetch	*Astragalus hornii* var. *hornii*	None	None	-	1B.1
intermediate mariposa-lily	*Calochortus weedii* var. *intermedius*	None	None	-	1B.2
Lewis' evening-primrose	*Camissoniopsis lewisii*	None	None	-	3
Los Angeles sunflower	*Helianthus nuttallii* ssp. *parishii*	None	None	-	1A
many-stemmed dudleya	*Dudleya multicaulis*	None	None	-	1B.2
mud nama	*Nama stenocarpa*	None	None	-	2B.2
paniculate tarplant	*Deinandra paniculata*	None	None	-	4.2
Parish's brittlescale	*Atriplex parishii*	None	None	-	1B.1
prostrate vernal pool navarretia	*Navarretia prostrata*	None	None	-	1B.2
red sand-verbena	*Abronia maritima*	None	None	-	4.2
Robinson's pepper-grass	*Lepidium virginicum* var. *robinsonii*	None	None	-	4.3
salt marsh bird's-beak	*Chloropyron maritimum* ssp. *maritimum*	Endangered	Endangered	-	1B.2
salt spring checkerbloom	*Sidalcea neomexicana*	None	None	-	2B.2
San Bernardino aster	*Symphyotrichum defoliatum*	None	None	-	1B.2
San Diego button-celery	*Eryngium aristulatum* var. *parishii*	Endangered	Endangered	-	1B.1
Santa Ana River woollystar	*Eriastrum densifolium* ssp. *sanctorum*	Endangered	Endangered	-	1B.1
small spikerush	*Eleocharis parvula*	None	None	-	4.3
small-flowered morning-glory	*Convolvulus simulans*	None	None	-	4.2
south coast branching phacelia	*Phacelia ramosissima* var. *austrolitoralis*	None	None	-	3.2
south coast saltscale	*Atriplex pacifica*	None	None	-	1B.2

Table 5.3-1 Sensitive Plant Species

Common Name	Scientific Name	Federal Status	State Status	CDFW Status	CA Rare Plant Rank
southern California black walnut	*Juglans californica*	None	None	-	4.2
southern tarplant	*Centromadia parryi* ssp. *australis*	None	None	-	1B.1
southwestern spiny rush	*Juncus acutus* ssp. *leopoldii*	None	None	-	4.2
vernal barley	*Hordeum intercedens*	None	None	-	3.2
woolly seablite	*Suaeda taxifolia*	None	None	-	4.2

Source: CDFW 2020b.
Notes: Rare Plant Ranks:
- 1A: Plants presumed extinct in California and rare/extinct elsewhere
- 1B.1: Plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California
- 1B.2: Plants rare, threatened, or endangered in California and elsewhere; fairly threatened in California
- 1B.3: Plants rare, threatened, or endangered in California and elsewhere; not very threatened in California
- 2A: Plants presumed extirpated in California, but more common elsewhere
- 2B.1: Plants rare, threatened, or endangered in California, but more common elsewhere; seriously threatened in California
- 2B.2: Plants rare, threatened, or endangered in California, but more common elsewhere; fairly threatened in California
- 2B.3: Plants rare, threatened, or endangered in California, but more common elsewhere; not very threatened in California
- 3.1: Plants about which we need more information; seriously threatened in California
- 3.2: Plants about which we need more information; fairly threatened in California
- 3.3: Plants about which we need more information; not very threatened in California
- 4.1: Plants of limited distribution; seriously threatened in California
- 4.2: Plants of limited distribution; fairly threatened in California
- 4.3: Plants of limited distribution; not very threatened in California

Sensitive Wildlife

A review of the CNDDB identifies the sensitive wildlife, shown in Table 5.3-2, within four quads that encompass Santa Ana—the Tustin, Orange, Anaheim, and Newport Beach quads.

Table 5.3-2 Sensitive Wildlife Species

Common Name	Scientific Name	Federal Status	State Status	CDFW Status
Amphibians				
Coast Range newt	*Taricha torosa*	None	None	SSC
western spadefoot	*Spea hammondii*	None	None	SSC
Birds				
American bittern	*Botaurus lentiginosus*	None	None	-
American peregrine falcon	*Falco peregrinus anatum*	Delisted	Delisted	FP
American white pelican	*Pelecanus erythrorhynchos*	None	None	SSC
bald eagle	*Haliaeetus leucocephalus*	Delisted	Endangered	FP
bank swallow	*Riparia*	None	Threatened	-
Barrow's goldeneye	*Bucephala islandica*	None	None	SSC
Belding's savannah sparrow	*Passerculus sandwichensis beldingi*	None	Endangered	-
Bell's sage sparrow	*Artemisiospiza belli*	None	None	WL
black skimmer	*Rynchops niger*	None	None	SSC
black-crowned night heron	*Nycticorax*	None	None	-
burrowing owl	*Athene cunicularia*	None	None	SSC
California black rail	*Laterallus jamaicensis coturniculus*	None	Threatened	FP

Table 5.3-2 Sensitive Wildlife Species

Common Name	Scientific Name	Federal Status	State Status	CDFW Status
California brown pelican	*Pelecanus occidentalis californicus*	Delisted	Delisted	FP
California gull	*Larus californicus*	None	None	WL
California horned lark	*Eremophila alpestris actia*	None	None	WL
California least tern	*Sternula antillarum browni*	Endangered	Endangered	FP
Caspian tern	*Hydroprogne caspia*	None	None	-
Clark's marsh wren	*Cistothorus palustris clarkae*	None	None	SSC
coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	None	None	SSC
coastal California gnatcatcher	*Polioptila californica*	Threatened	None	SSC
common loon	*Gavia immer*	None	None	SSC
Cooper's hawk	*Accipiter cooperii*	None	None	WL
Costa's hummingbird	*Calypte costae*	None	None	-
double-crested cormorant	*Phalacrocorax auritus*	None	None	WL
elegant tern	*Thalasseus elegans*	None	None	WL
grasshopper sparrow	*Ammodramus savannarum*	None	None	SSC
great blue heron	*Ardea herodias*	None	None	-
great egret	*Ardea alba*	None	None	-
least Bell's vireo	*Vireo bellii pusillus*	Endangered	Endangered	-
least bittern	*Ixobrychus exilis*	None	None	SSC
lesser sandhill crane	*Antigone canadensis*	None	None	SSC
light-footed Ridgway's rail	*Rallus obsoletus levipes*	Endangered	Endangered	FP
loggerhead shrike	*Lanius ludovicianus*	None	None	SSC
long-billed curlew	*Numenius americanus*	None	None	WL
long-eared owl	*Asio otus*	None	None	SSC
Lucy's warbler	*Oreothlypis luciae*	None	None	SSC
mountain plover	*Charadrius montanus*	None	None	SSC
northern harrier	*Circus hudsonius*	None	None	SSC
olive-sided flycatcher	*Contopus cooperi*	None	None	SSC
osprey	*Pandion haliaetus*	None	None	WL
prairie falcon	*Falco mexicanus*	None	None	WL
purple martin	*Progne subis*	None	None	SSC
redhead	*Aythya americana*	None	None	SSC
rufous hummingbird	*Selasphorus rufus*	None	None	-
sharp-shinned hawk	*Accipiter striatus*	None	None	WL
short-eared owl	*Asio flammeus*	None	None	SSC
short-tailed albatross	*Phoebastria albatrus*	Endangered	None	SSC
snowy egret	*Egretta thula*	None	None	-
southern California rufous-crowned sparrow	*Aimophila ruficeps canescens*	None	None	WL
summer tanager	*Piranga rubra*	None	None	SSC
Swainson's hawk	*Buteo swainsoni*	None	Threatened	-
tricolored blackbird	*Agelaius tricolor*	None	Threatened	SSC
Vaux's swift	*Chaetura vauxi*	None	None	SSC

Table 5.3-2 Sensitive Wildlife Species

Common Name	Scientific Name	Federal Status	State Status	CDFW Status
vermilion flycatcher	*Pyrocephalus rubinus*	None	None	SSC
western snowy plover	*Charadrius alexandrinus nivosus*	Threatened	None	SSC
western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	Threatened	Endangered	-
white-faced ibis	*Plegadis chihi*	None	None	WL
white-tailed kite	*Elanus leucurus*	None	None	FP
willow flycatcher	*Empidonax traillii*	None	Endangered	-
yellow rail	*Coturnicops noveboracensis*	None	None	SSC
yellow warbler	*Setophaga petechia*	None	None	SSC
yellow-breasted chat	*Icteria virens*	None	None	SSC
yellow-headed blackbird	*Xanthocephalus*	None	None	SSC
Crustaceans				
Riverside fairy shrimp	*Streptocephalus woottoni*	Endangered	None	-
San Diego fairy shrimp	*Branchinecta sandiegonensis*	Endangered	None	-
Fish				
Santa Ana sucker	*Catostomus santaanae*	Threatened	None	-
steelhead - southern California DPS	*Oncorhynchus mykiss irideus*	Endangered	None	-
tidewater goby	*Eucyclogobius newberryi*	Endangered	None	SSC
Insects				
Crotch bumble bee	*Bombus crotchii*	None	Candidate Endangered	-
globose dune beetle	*Coelus globosus*	None	None	-
greenest tiger beetle	*Cicindela tranquebarica viridissima*	None	None	-
monarch - California overwintering population	*Danaus plexippus*	None	None	-
quino checkerspot butterfly	*Euphydryas editha quino*	Endangered	None	-
sandy beach tiger beetle	*Cicindela hirticollis gravida*	None	None	-
wandering (=saltmarsh) skipper	*Panoquina errans*	None	None	-
western beach tiger beetle	*Cicindela latesignata*	None	None	-
western tidal-flat tiger beetle	*Cicindela gabbii*	None	None	-
Mammals				
American badger	*Taxidea taxus*	None	None	SSC
big free-tailed bat	*Nyctinomops macrotis*	None	None	SSC
hoary bat	*Lasiurus cinereus*	None	None	-
Mexican long-tongued bat	*Choeronycteris mexicana*	None	None	SSC
Pacific pocket mouse	*Perognathus longimembris pacificus*	Endangered	None	SSC
southern California saltmarsh shrew	*Sorex ornatus salicornicus*	None	None	SSC
western mastiff bat	*Eumops perotis californicus*	None	None	SSC
Yuma myotis	*Myotis yumanensis*	None	None	-
Mollusks				
mimic tryonia (=California brackishwater snail)	*Tryonia imitator*	None	None	-

Table 5.3-2 Sensitive Wildlife Species

Common Name	Scientific Name	Federal Status	State Status	CDFW Status
Reptiles				
coast horned lizard	*Phrynosoma blainvillii*	None	None	SSC
coast patch-nosed snake	*Salvadora hexalepis virgultea*	None	None	SSC
coastal whiptail	*Aspidoscelis tigris stejnegeri*	None	None	SSC
orange-throated whiptail	*Aspidoscelis hyperythra*	None	None	WL
red-diamond rattlesnake	*Crotalus ruber*	None	None	SSC
San Bernardino ringneck snake	*Diadophis punctatus modestus*	None	None	-
southern California legless lizard	*Anniella stebbinsi*	None	None	SSC
western pond turtle	*Emys marmorata*	None	None	SSC

Source: CDFW 2020b.
Notes:
FP: Fully Protected
SSC: Species of Special Concern
WL: Watch List

CDFW submitted a comment letter, dated March 26, 2020, in response to the Notice of Preparation (see Appendix A) that identifies five special status species with potential to occur within the region. Table 5.3-3 summarizes these species. The CDFW's letter also states that the Santa Ana River and its tributaries have historically supported the endangered southern California steelhead.

Table 5.3-3 Special Status Species with Potential to Occur Within the Region

No.	Species	Listing
1	Steelhead - southern California distinct population segment *(Oncorhynchus mykiss irideus)*	Federal Endangered Species Act (ESA) listed endangered
2	Coast horned lizard (*Phrynosoma blainvillii*)	SSC
3	Crotch bumble bee (*Bombus crotchii*)	Candidate for CESA-listed endangered
4	Mexican long-tongued bat (*Choeronycteris mexicana*)	SSC
5	American peregrine falcon (Falco peregrinus anatum)	FPS

Source: CDFW 2020c.
Notes:
FPS: Fully Protected Species
SSC: California Species of Special Concern (SSC)

Wildlife Movement Corridors

Wildlife movement corridors may include expanses of open space or vacant land, streams and rivers, or other geographic feature that can facilitate the movement of wildlife. The city is largely urbanized; wildlife movement corridors include the Santa Ana River and Santiago Creek. California Fish and Wildlife's comment letter dated March 26, 2020 (contained in Appendix A to this DEIR) indicates that the Santa Ana River and its tributaries have historically supported federally endangered southern California steelhead. According to the USFWS, the city does not contain critical habitat (USFWS 2020a).

Jurisdictional Waters and Wetlands

The Santa Ana River traverses the western side of the city from north to south. Santiago Creek stretches east-west in the northern part of the city and joins the Santa Ana River on its western end. The National Wetlands Inventory categorizes the Santa Ana River and Santiago Creek with various types of wetland habitat, including lake, freshwater forested/shrub, freshwater emergent wetland, riverine, and freshwater point (USFWS 2020b). In addition, the National Wetlands Inventory identifies a number of smaller channels and ponds throughout the city. The channels are classified as riverine, and the ponds are classified as freshwater pond (USFWS 2020b). The channels and the ponds are integrated into the existing built environment—for example, channels are constructed along public rights-of-way or run between developed parcels.

5.3.2 Thresholds of Significance

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

B-1 Have a substantial effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

B-2 Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

B-3 Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

B-4 Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

B-5 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

B-6 Conflict with the provisions of an adopted habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

5.3.3 Regulatory Requirements and General Plan Update Policies

5.3.3.1 REGULATORY REQUIREMENTS

RR B-1 Development associated with the General Plan Update will be required to comply with the provisions of the Federal Endangered Species Act, which protects and conserves any species

of plant or animal that is endangered or threatened with extinction, as well as the habitats where these species are found.

RR B-2 Regulatory requirement for potential direct/indirect impacts to common and sensitive bird and raptor species will require compliance with the California Fish and Game Code Section 3503.

RR B-3 Development associated with the General Plan Update will be required to comply with the provisions of the Federal Clean Water Act, including sections 401, 402, and 404. Development related to the General Plan Update would be required to obtain a permit pursuant to sections 401, 402, or 404.

RR B-4 Development associated with the General Plan Update will be required to comply with the California Fish and Game Code, Section 1600. Developments that propose any alteration of streambeds, rivers, and lakes are required to notify the California Department of Fish and Wildlife.

RR B-5 Development associated with the General Plan Update will be required to comply with the provisions of the California Endangered Species Act and obtain a 2081 permit or memorandum of understanding for the take of a protected species.

5.3.3.2 GENERAL PLAN UPDATE POLICIES

The following are relevant policies of the Santa Ana General Plan Update, which may contribute to reduce potential impacts to biological resources as a result of implementation.

Circulation Element

- **Policy 3.8 Santa Ana River and Golden Loop.** Proactively pursue the improvement and restoration of the Santa Ana River natural habitat and the completion of the Golden Loop to serve as a multi-use recreational amenity.
- **Policy 5.9 Street Trees.** Support the greening of City streets through the establishment and maintenance of an urban forest to improve street aesthetics, filter pollution, and address GHG emissions.

Conservation Element

- **Policy 2.1 Native Wildlife Habitat Protection.** Protect and enhance natural vegetation in parks and open spaces for wildlife habitat, erosion control, and to serve as noise and scenic buffers.
- **Policy 2.2 Biodiversity Preservation.** Collaborate with State and County agencies to promote biodiversity and protect sensitive biological resources.
- **Policy 3.5 Landscaping.** Encourage the planting of native and diverse tree species to reduce heat island effect, reduce energy consumption, and contribute to carbon mitigation.

- **Policy 4.2 Landscaping.** Encourage public and private property owners to plant native or drought-tolerant vegetation.

Land Use Element

- **Policy 4.2 Public Realm.** Maintain and improve the public realm through quality architecture, street trees, landscaping, and other pedestrian-friendly amenities.

Open Space Element

- **Policy 1.6 Sustainable Landscape.** Promote citywide use of drought tolerant landscape and development practices for wise water use and energy consumption.
- **Policy 2.4 Urban Forest.** Maintain, preserve, and enhance the city's urban forest as an environmental, economic, and aesthetic resource to improve residents' quality of life.
- **Policy 3.6 Naturalizing the Santa Ana River.** Explore opportunities to reintroduce natural habitat along the Santa Ana River to provide natural habitat and educational and recreational opportunities.

Public Services Element

- **Policy 3.5 Green Infrastructure.** Incorporate sustainable design and Low Impact Development (LID) techniques for storm water facilities and new development to achieve multiple benefits, including enhancing preserving and creating open space and habitat and improving runoff water quality.

Urban Design Element

- **Policy 3.1 Landscaped Travelways.** Promote visually appealing and sustainable landscaping along freeway corridors, roadway medians, and parkways.
- **Policy 3.7 Natural Recreational Amenities.** Enhance natural and recreational features of Santiago Creek and the Santa Ana River corridors and provide linkages throughout the community.
- **Policy 3.10 Coordinated Street Improvement Plans.** Coordinate citywide landscape medians and street trees with land use plans and development projects.
- **Policy 3.11 Urban Forest.** Create a diverse urban forest with a variety of sustainable trees in medians, parkways, public open space, and private development.

5.3.4 Environmental Impacts

5.3.4.1 METHODOLOGY

Inventory

CSLS conducted a Biological and Natural Resource inventory. The Biological and Natural Resource inventory began with a thorough investigation of available literature and databases regarding existing and known open space through the current General Plan mapping of sensitive habitats, special status plants, and wildlife species within the city boundaries and SOI.

Following the database and literature investigation, a visual aerial survey of the city was completed utilizing Google Earth aerials and existing General Plan Open Space land use designations. CSLS started with parcels currently designated Open Space on the existing General Plan land use map. Those parcels were inventoried to determine current use and current habitat classifications on each parcel. CSLS then searched aerial photographs and identified remaining vacant parcels. For the vacant parcels, CSLS identified the assessor's parcel number (APN), current land use designation, and current habitat classifications on each parcel. All parcels, open space and not open space, are linked to the City's GIS identification number, and the size of each parcel is also provided. Following the aerial inventory of parcels appearing as vacant and designated as Open Space, CSLS spot checked the parcels in the field to confirm the vegetation community on-site.

Analysis

Following the Biological and Natural Resource inventory, an impact analysis was conducted for each focus area. For each parcel analyzed, a determination was made whether the proposed change in land use from existing land use to proposed land use would cause a biological impact. The purpose of the biological assessment was to describe the biological and natural resource inventory within the City and its SOI and provide a summary of natural resources for the entire City as well as its focus areas. For this reason, a complete biological analysis of each parcel was not conducted. The analysis focused on parcels that are designated as Open Space and vacant parcels that would have a change in land use under the GPU.

5.3.4.2 IMPACT ANALYSIS

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

Impact 5.3-1: Implementation of the General Plan Update could result in adverse impacts to candidate, sensitive, or special-status species. [Threshold B-1]

Sensitive biological resources are habitats or species that have been recognized by federal, state, and/or local agencies as endangered, threatened, rare, or in decline throughout all or part of their historical distribution. Development in areas that contain sensitive species or habitat could have an adverse impact on biological resources. A letter from CDFW (March 26, 2020) in response to the Notice of Preparation identifies five special

status species that have the potential to exist in the region—steelhead, coast horned lizard, crotch bumble bee, Mexican long-tongued bat, and American peregrine falcon.

A total of 499 parcels are designated as Open Space land use within the city boundaries. An additional 135 parcels within the city boundaries were identified as vacant or containing natural resources but are not designated Open Space. Another four parcels, consisting of 83.37 acres, were identified as vacant parcels outside of the city but within the SOI. The SOI parcels include vacant parcels in the concrete-lined Santa Ana River. Santa Ana and its SOI contain seven types of vegetation communities—riparian, unvegetated streambed, oak woodland, ornamental, ruderal, disturbed, and developed.

None of the parcels outside of the focus areas have a proposed land use change as part of this GPU. Nevertheless, the Biological and Natural Resources Report found that, of the parcels outside of the focus areas without an open space land use designation, none have sensitive habitat, native habitat, or any condition under which a biological impact could occur if developed.

The GPU proposes no change in land use designation for parcels identified as open space or vacant parcels within the SOI; therefore, no impacts would occur from the GPU. The GPU proposes no change in General Plan land use designation for the remaining parcels identified as open space or vacant parcels within the city limits.

Focus Areas

Within the five focus areas, a total of 59 parcels were identified, either vacant or designated Open Space. These 59 parcels total 164.42 acres, and 47 parcels are designated Open Space by the existing General Plan land use map. With the proposed General Plan Update, all 47 parcels remain designated Open Space and contain developed, disturbed, ornamental and ruderal vegetation communities. No parcels that are designated as Open Space would change to developable land uses, and no impact would occur. The remaining 12 parcels currently have developable land use designations (Professional and Administrative Office, General Commercial, or Low Density Residential) and are proposed to change to other developable land use designations (Industrial and Urban Neighborhood). These 12 parcels are vacant and have vegetation communities classified as disturbed and ruderal. Since the existing vegetation communities within these 12 parcels are not sensitive, no impact would occur. A discussion for each focus area follows.

Grand Avenue/17th Street Focus Area

The Grand Avenue/17th Street Focus Area consists of 11 parcels that are either designated as Open Space or are vacant. Of the 11 vacant or designated Open Space parcels, 9 parcels are redesignated as part of the GPU. The existing land use designations for these 9 parcels include Professional and Administrative Office, General Commercial, and Low Density Residential. The land use designation on these parcels would change to Urban Neighborhood under the GPU. The vegetation community observed on these parcels is classified as "disturbed" and is not native nor considered to be a sensitive vegetation community. Since the existing vegetation communities are not sensitive, no impact would occur from the proposed land use change. Since the 9 parcels for the proposed GPU changes would occur to vegetation communities that are not sensitive and non-native, these impacts are not considered significant.

The remaining two parcels are designated Open Space, and the GPU does not propose any revisions to the existing land use designation; therefore, no impacts would occur.

South Main Street Focus Area

The South Main Street Focus Area does not contain any Open Space designated parcels nor vacant lots. Furthermore, due to the built nature of this focus area, no impacts would occur with implementation of the GPU.

55 Freeway/Dyer Road Focus Area

Three parcels within the 55 Freeway/Dyer Road focus area are vacant and have a land use designation of Professional and Administrative Office that would change to Industrial/Flex under the GPU. The vegetation community observed within these three parcels is classified as "ruderal", which is not native nor considered to be a sensitive vegetation community. Since the existing vegetation communities are not sensitive and non-native, no impact would occur from the proposed land use change.

South Bristol Street Focus Area

The South Bristol Street Focus Area consists of 10 parcels of Open Space designated land use and no vacant parcels. The GPU does not propose revisions to the existing land use designations of these Open Space parcels; therefore, no impacts would occur.

West Santa Ana Boulevard Focus Area

The West Santa Ana Boulevard Focus Area consists of 28 parcels of Open Space designated parcels and no vacant parcels. Of the 28 parcels designated as Open Space the GPU update does not propose any revisions to the existing land use designations; therefore, no impact would occur.

Conclusion

The inventory of existing conditions determined that no parcels with a proposed land use designation that allows for development (i.e., not an open space designation) currently has sensitive vegetation. All parcels currently have ruderal vegetation and little to no biological value. Therefore, there is no current indication that future development in accordance with the GPU would have significant unavoidable biological impacts. However, the programmatic analysis prepared for this General Plan Update was not at the detailed, site-specific analysis required for a specific development project. Site-specific analyses could reveal biological resources not identified in the Biological and Natural Resources Report. Therefore, there is a potential for biological impacts associated with implementation of the GPU. Therefore, implementation of the GPU could result in a potentially significant impact.

The letter received from CDFW states that the Santa Ana River and its tributaries historically supported federally endangered southern California steelhead. CDFW's letter requests that the Draft Program EIR include an analysis of any proposed major stream crossings in the context of fish passage, and states that the analysis should include, but not be limited to, steelhead presence or historic presence, existing conditions including

habitat and barrier assessments, any known projects to remove barriers or restore habitat that would affect or be affected by this project, and cumulative impacts to steelhead populations and/or habitat resulting from this project. The GPU does not propose any major stream crossings. If any future development project entails improvements for stream crossings (e.g. Santa Ana River and Santiago Creek), the project level CEQA compliance would require a biological resources report that would address potential impacts to endangered species including the California steelhead.

Level of Significance Before Mitigation: Even with the implementation of RR B-1, RR B-2, RR B-4, RR B-5, conservation element policies 2.1 and 2.2, and open space element policy 3.6, Impact 5.3-1 is still potentially significant.

Impact 5.3-2: Development pursuant to the General Plan Update would not impact riparian habitat or other sensitive natural communities. [Threshold B-2]

Parcels identified as riparian vegetation and oak woodland are associated with the Santiago Creek on the northern portion of the city (refer to Figure 5.3-1). These parcels are not in a focus area. None of the parcels outside of the focus areas have a proposed land use change as part of this GPU. None of the focus areas contain riparian or oak woodland. Therefore, implementation of the GPU would have a less than significant impact on riparian or other sensitive natural communities.

Level of Significance Before Mitigation: Less than significant.

Impact 5.3-3: Development pursuant to the General Plan Update would not impact wetlands and jurisdictional waterways. [Threshold B-3]

Wetlands that are next to or hydrologically connected to jurisdictional waterways are protected under the Clean Water Act. Wetlands are identified along the Santa Ana River and Santiago Creek along with channels and ponds throughout the city (USFWS 2020b). The Biological and Natural Resources Report identifies riparian, oak woodland, ornamental, and developed vegetation communities along Santiago Creek, and unvegetated streambed, ornamental, and developed vegetation communities along the Santa Ana River. Channels throughout the city are classified as ornamental, disturbed, and developed. Development of projects pursuant to the GPU would not impact wetlands and jurisdictional waterways since the GPU would not change the land use designations of the San Ana River, Santiago Creek, and channels. Therefore, a less than significant impact would occur.

Level of Significance Before Mitigation: Less than significant.

Impact 5.3-4: The General Plan Update could affect wildlife movement and impact migratory birds. [Threshold B-4]

The City of Santa Ana is largely urbanized, and migration corridors are generally limited to the Santa Ana River and the Santiago Creek. Development under the GPU would result in the further infill of the city and removal of vacant sites. The GPU would not change land use designations of parcels that encompass the Santa Ana River or the Santiago Creek. However, development under the GPU could further result in vegetation removal,

intrusion by humans and pets, and increased noise and air pollutants, which could impact wildlife movement and nesting sites. Therefore, the buildout of the GPU could affect wildlife movement, nesting sites, and migratory birds protected under the Migratory Bird Treaty Act as well as state law.

Level of Significance Before Mitigation: Even with the implementation of RR B-2, conservation element policies 2.1 and 2.2, and open space element policy 3.6, Impact 5.3-4 is still potentially significant.

Impact 5.3-5: The General Plan Update would not conflict with an adopted NCCP/HCP or local policies or ordinances protecting biological resources. [Thresholds B-5 and B-6]

The City of Santa Ana is not within a NCCP/HCP area, and therefore would not conflict with an adopted NCCP/HCP plan. Buildout under the GPU would be required to comply with all applicable federal and state laws and regulations governing the protection and preservation of wildlife, plants, and habitat. Further development within the city would be required to comply with the City's Municipal Code, including Article VII, Regulation for the Planting, Maintenance, and Removal of Trees. Therefore, the full buildout pursuant to the GPU would not conflict with the provisions of an adopted NCCP/HCP; an approved local, regional, or state habitat conservation plan; or other local tree preservation ordinance or policy.

Level of Significance Before Mitigation: Less than significant.

5.3.5 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, some impacts would be less than significant: 5.3-2, 5.3-3, and 5.3-5.

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

- **Impact 5.3-1** Buildout under the General Plan Update could impact plant and animal species and habitat that are sensitive or protected under federal and/or California regulations.
- Impact 5.3-4 Implementation of the General Plan Update could impact wildlife corridors and nesting sites.

5.3.6 Mitigation Measures

Impacts 5.3-1 and 5.3-4

BIO-1 For development or redevelopment projects that would disturb vegetated land or major stream and are subject to CEQA, a qualified biologist shall conduct an initial screening to determine whether a site-specific biological resource report is warranted. If needed, a qualified biologist shall conduct a field survey for the site and prepare a biological resource assessment for the project, including an assessment of potential impacts to sensitive species, habitats, and jurisdictional waters. The report shall recommend mitigation measures, as appropriate, to avoid or limit potential biological resource impacts to less than significant.

5.3.7 Level of Significance After Mitigation

Impacts 5.3-1 and 5.3-4 would be less than significant with compliance with all applicable federal, state, and local regulations and incorporation of mitigation measure BIO-1. Impacts 5.3-2, 5.3-3 and 5.3-5 are less than significant prior to mitigation.

5.3.8 References

California Department of Fish and Wildlife (CDFW). 2020a, April 21 (accessed). NCCP Plan Summary: County of Orange (Central/Coastal) NCCP/HCP. https://wildlife.ca.gov/Conservation/Planning/NCCP/Plans/Orange-Coastal.

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Carlson Strategic Land Solutions Inc. 2020, May 26. Biological and Natural Resource Inventory and Assessment for the City of Santa Ana General Plan Update.

Orange County Environmental Management Agency. 1996, July 15. Natural Community Conservation Plan and Habitat Conservation Plan: County of Orange Central and Coastal Subregion Parts I and II. https://occonservation.org/wp-content/uploads/2015/04/NCCP-Parts-I-II-Plan.pdf.

United States Fish and Wildlife Service (USFWS). 2020a, April 21 (accessed). Critical Habitat for Threatened and Endangered Species. https://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265ad4fe09893cf75b8dbfb77.

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Weather Spark. 2019, August 21 (accessed). Average Weather in Santa Ana. https://weatherspark.com/y/1899/Average-Weather-in-Santa-Ana-California-United-States-Year-Round/.

5.4 CULTURAL RESOURCES

Cultural resources comprise archaeological and historical resources. Archaeology includes human artifacts, such as places, objects, and settlements that reflect group or individual religious, cultural, or everyday activities. Historical resources include sites, structures, objects, or places that are at least 50 years old and are significant for their engineering, architecture, cultural use or association, etc. In California, historic resources cover human activities over the past 12,000 years. Cultural resources provide information on scientific progress, environmental adaptations, group ideology, or other human advancements. This section of the Program Environmental Impact Report (PEIR) evaluates the potential for implementation of the General Plan Update for the City of Santa Ana to impact cultural resources in Santa Ana and its sphere of influence (plan area). The analysis in this section is based in part on the following information:

- *Historical Resources Technical Report*, Chattel, May 4, 2020.
- *Archaeological Resources Technical Report for the City of Santa Ana General Plan Update, Orange County, California,* SWCA Environmental Consultants, May 2020.

Complete copies of these studies are in the technical appendices of this PEIR as Volume II, Appendix E-a and Appendix E-b, respectively.

5.4.1 Environmental Setting

Federal, state, and local laws, regulations, plans, or guidelines that are applicable to the General Plan Update are summarized below.

5.4.1.1 REGULATORY BACKGROUND

Federal

National Environmental Policy Act

The National Environmental Policy Act of 1969 requires that federal agencies include in their decision-making processes appropriate and careful consideration of all environmental effects and actions. Regarding cultural resources, the act states, "It is the continuing responsibility of the Federal Government to use all practicable means . . . to preserve important historic, cultural, and natural aspects of our national heritage" (42 US Code § 4331). The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, or may cause loss or destruction of significant scientific, cultural, or historical resources must be considered (40 CFR [Code of Federal Regulations] § 1508.27(b)8).

National Historic Preservation Act

The National Historic Preservation Act of 1966 coordinates public and private efforts to identify, evaluate, and protect the nation's historic and archaeological resources. The act authorized the National Register of Historic Places, which lists districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture.

Section 106 (Protection of Historic Properties) requires federal agencies to take into account the effects of their undertakings on historic properties. Section 106 Review ensures that historic properties are considered during federal project planning and implementation. The Advisory Council on Historic Preservation, an independent federal agency, administers the review process with assistance from state historic preservation offices.

National Register of Historic Places

The National Register of Historic Places is the nation's official list of historic and cultural resources worthy of preservation. Properties listed in the National Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture. The National Register is administered by the National Park Service, which is part of the United States Department of the Interior. Resources are eligible for National Register listing if they:

1. Are associated with events that have made a significant contribution to the broad patterns of our history; or

2. Are associated with the lives of significant persons in our past; or

3. 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

4. Have yielded or may be likely to yield, information important in history or prehistory (National Park Service 2002).

Ordinarily cemeteries, birthplaces, or graves of historic figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, and properties that are primarily commemorative in nature are not considered eligible for the National Register unless they satisfy certain conditions. In general, a resource must be 50 years old to be considered for the National Register unless it satisfies a standard of exceptional importance.

In addition to satisfying at least one of the criteria of significance, a resource must also possess integrity. Integrity refers to the ability of a property to convey its significance, and the degree to which the property retains the identity, including physical and visual attributes, for which it is significant. The National Register recognizes seven aspects or qualities of integrity: location, design, setting, materials, workmanship, feeling, and association. To retain its historic integrity, a property must possess several, and usually most, of these aspects. While integrity is important in evaluating and determining significance, a property's physical condition, whether it is in a deteriorated or pristine state, has relatively little influence on its significance. A property that is in good condition may lack the requisite level of integrity to convey its significance due to alterations or other factors. Likewise, a property in extremely poor condition may still retain substantial integrity from its period of significance and clearly convey its significance.

National Historic Landmarks Program

The National Historic Landmarks Program was established to preserve, protect, and maintain nationally significant historic places designated by the Secretary of the Interior because they are important to the entire nation. These buildings, sites, districts, structures, and objects possess exceptional value or quality in illustrating or interpreting the heritage of the United States in history, architecture, archeology, engineering, and culture. The National Historic Landmarks criteria (36 CFR 65.4[a and b]) set a stringent test for national significance, including high historical integrity.

Secretary of the Interior's Standards for the Treatment of Historic Properties

The Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR Part 68, 1995) consists of standards for preservation, rehabilitation, restoration and reconstruction of historic properties. The Standards and their associated guidelines are intended to be applied to a wide variety of resource types, including buildings, sites, structures, objects, and districts and have been adopted at the federal, state, and local levels. The Standards are regulatory for grants-in-aid projects assisted through the Historic Preservation Fund authorized by the National Historic Preservation Act.

Archaeological Resources Protection Act

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

Antiquities Act of 1906

The Antiquities Act of 1906 (16 US Code §§ 431–433) prohibits any excavation on public land without permission of the appropriate department secretary and authorizes the president to declare areas of federal lands as national monuments. Preservation of American Antiquities (43 CFR Part 3) implements the Antiquities Act.

State

Archaeological and historical sites are protected under a wide variety of state policies and regulations.

California Environmental Quality Act

According to the California Environmental Quality Act (CEQA),

> an historical resource is a resource listed in, or determined eligible for listing in, the California Register of Historical Resources. Historical resources included in a local register of historical resources ... or deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1 [i.e., the California Register of Historical Resources criteria, see below], are presumed to be historically or culturally significant for purposes of this section, unless the preponderance of the evidence demonstrates that the resource is not historically or culturally significant. (Public Resources Code [PRC] §21084.1)

If a proposed project were expected to cause substantial adverse change in an historical resource, environmental clearance for the project would require mitigation measures to reduce impacts. (CEQA Guidelines § 15064.5 [b][1]). According to the CEQA Guidelines (§ 15064.5 [b][3]),

> Generally, a project that follows the Secretary of the Interior Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995), Weeks and Grimmer, shall be considered as mitigated to a level of less than a significant impact on the historical resource.

The Secretary of the Interior Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (Secretary's Standards) is published by the National Park Service and was updated and reissued in July 2017 (Grimmer 2017).

California Register of Historical Resources

The California Register of Historical Resources (California Register) was established to serve as an authoritative guide to the state's significant historical and archaeological resources (PRC § 5024.1). PRC Section 5024.1 provides criteria for listing in the California Register. PRC Sections 5020 to 5029.5 continued the former Historical Landmarks Advisory Committee as the State Historical Resources Commission. The commission oversees the administration of the California Register of Historical Resources and is responsible for designating State Historical Landmarks and Historical Points of Interest. California Historical Landmarks are buildings, structures, sites, or places that have been determined to have statewide historical significance. California Points of Historical Interest are sites, buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value.

California Historical Landmarks

California Historical Landmarks are buildings, structures, sites, or places that have been determined to have statewide historical significance by meeting at least one of the criteria listed below:

- The first, last, only, or most significant of its type in the state or within a large geographic region (Northern, Central, or Southern California).
- Associated with an individual or group having a profound influence on the history of California.
- A prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer or master builder.

The resource also must have written consent of the property owner; be recommended by the State Historical Resources Commission; and be officially designated by the Director of California State Parks. California Historical Landmarks #770 and above are automatically listed in the California Register of Historical Resources.

California Points of Historical Interest

California Points of Historical Interest are sites, buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. Points of Historical Interest designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the California Register. To be eligible for designation as a Point of Historical Interest, a resource must meet at least one of the following criteria:

- The first, last, only, or most significant of its type within the local geographic region (City or County).
- Associated with an individual or group having a profound influence on the history of the local area.
- A prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in the local region of a pioneer architect, designer or master builder.

Designation requires owner consent and approval of the State Historical Resources Commission.

California Office of Historic Preservation and California Heritage Fund

PRC Sections 5079 to 5079.65 define the functions and duties of the Office of Historic Preservation, which administers federal- and state-mandated historic preservation programs in California, as well as the California Heritage Fund.

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

California Historical Building Code

The California Historical Building Code, defined in Sections 18950 to 18961 of Division 13, Part 2.7 of California's Health and Safety Code, exists to preserve the state's architectural heritage by recognizing unique construction issues inherent in maintaining and rehabilitating historical resources. The code provides alternative building regulations for permitting repairs, alterations, and additions necessary for preservation, rehabilitation, relocation, related construction, change of use, or continued use of a "qualified historical building or structure," defined in Section 18955 of the California Historical Building Code.

California Health and Safety Code, Section 7050.5

In accordance with California Health and Safety Code, Section 7050.5, if human remains are found, the county coroner shall be notified within 24 hours of the discovery. No further excavation or disturbance of the site 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 believed to be Native American, s/he shall notify NAHC in Sacramento within 48 hours. In accordance with California Public Resources Code, Section 5097.98, the NAHC must immediately notify those persons it believes to be the most likely descended from the deceased Native American. The descendants 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.

Regional

The Southern California Association of Governments' Growth Management Chapter has instituted policies regarding the protection of cultural resources. Policy No. 3.21 "encourages the implementation of measures aimed at the preservation and protection of recorded and unrecorded cultural resources and archaeological sites" (SCAG 2001).

Local

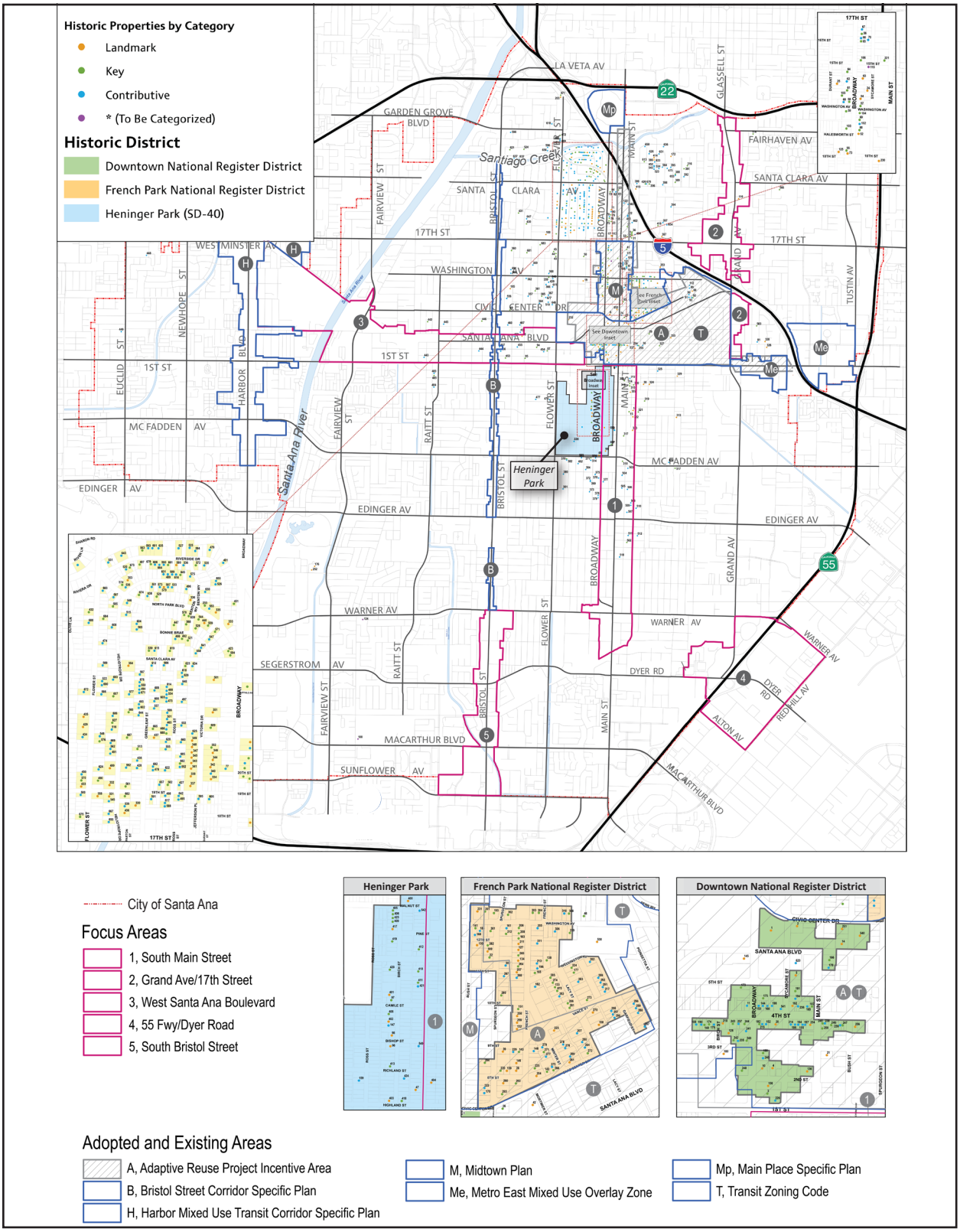
Santa Ana Historic Resources Commission

The Santa Ana Historic Resources Commission was established to recognize and preserve historic structures important to the heritage of the City. The program promotes the identification, evaluation, rehabilitation, adaptive use, and restoration of historic structures. In 1998, the City adopted Chapter 30 of the Santa Ana Municipal Code to establish the Santa Ana Register of Historical Properties and created a Historic Resources Commission to oversee Santa Ana's Historic Preservation Program. The City of Santa Ana has two National Register Districts, Downtown Santa Ana and French Park, and a locally recognized historic district, Heninger Park established through Specific Development 40 (SD-40). French Park Neighborhood also maintains zoning protections for its historical resources through SD-19 (refer to Figure 5.4-1). Any improvements or alterations to a property on the Santa Ana Register of Historic Properties, as well as contributing properties in a historic district, must meet the Secretary of Interior Standards for Rehabilitation and require a Certificate of Appropriateness. Major alterations, relocations, or demolitions are considered for approval by the Historic Resources Commission.

Santa Ana Municipal Code Chapter 30: Historic Preservation Ordinance

Chapter 30 of the Santa Ana Municipal Code, adopted by City Council in 1998 and amended at various points since that time, established Santa Ana's Historic Preservation program, created the Historic Resources Commission (HRC) to oversee the program, and instituted the Santa Ana Register of Historical Properties (Santa Ana Register) to list local historically significant properties. This section also provides criteria for designation of buildings, structures, objects, or sites of historical or archeological importance. The City administers a review process for exterior modifications, major alterations, relocations, and/or demolitions of historic properties based on conformance with the Secretary's Standards.

Figure 5.4-1 - Proposed General Plan Focus Areas and Other Special Planning Areas Overlay on Santa Ana Register Map



Source: Chattel, 2020; City of Santa Ana, 2020

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As defined by Chapter 30 of the Santa Ana Municipal Code, a local historic district refers to a collection or group of historic properties within a defined area. (§§ 30-25 through 30-30). According to Chapter 30, a local historic district shall be designated only if it meets one or more of the following standards:

(1) The area constitutes a distinct section of the city and has special character, historical, architectural, or aesthetic interest and value.

(2) The area provides significant examples of architectural values of the past or landmarks in the history of architecture.

(3) The area serves as a reminder of past eras, events, or persons important in the history of the city, the county, the state or the United States of America or illustrates past living styles for future generations to observe, study, or inhabit.

(4) The area is the site of a historically or culturally significant ground, garden, or object.

Under Chapter 30, local historic districts are designated by resolution from the City Council after receiving the recommendation from the HRC. At the time of the creation of the local historic district, the City Council may adopt design guidelines for the historic district. To date (2019), the City has not designated any local historic districts using this provision.

However, the City of Santa Ana has two listed National Register historic districts—Downtown Santa Ana (listed in 1984) and French Park (listed in 1999). In addition to National Register listing status, the French Park Neighborhood also maintains zoning protection for its historical resources through Specific Development 19 (SD-19). While not National Register-listed, a third district, the Heninger Park neighborhood, also has zoning protection for its historic buildings through Specific Development 40 (SD-40). A specific Neighborhood Review process must be followed for all exterior improvements and new construction within the boundaries of the Historic French Park (SD-19) and Heninger Park (SD-40) districts.

Santa Ana Historic Property Preservation Agreements (Mills Act)

Property owners whose properties are listed on the Santa Ana Register are eligible to enter into a historic property preservation agreement (Mills Act agreement) with the City, as recommended by the Santa Ana Historic Resources Commission and approved by City Council. Pursuant to California Government Code Sections 50281 et seq., a Mills Act agreement provides a property tax relief incentive for owners of qualified historic properties to maintain and preserve the historic and architectural character of their property. As of 2019, Santa Ana has awarded 293 recorded and 2 pending Mills Act agreements.

French Park Historic District Specific Development No. 19 (SD-19) Development Standards and Architectural Design Guidelines

In 1984, the City Council created the French Park Historic District Specific Development No. 19 (SD-19) through adoption of a zoning ordinance that delineated the SD-19 boundary, implemented the City's first historic overlay zone, and set standards for all exterior rehabilitation and new infill development projects of properties within the French Park Historic District (see Figure 5.4-1). The ordinance stipulates that all exterior

rehabilitation and conversion projects be subject to design review by the Planning Department, and all new infill development projects be subject to site plan review by the Planning Commission. All rehabilitation projects must conform to the Secretary of the Interior's Standards for Rehabilitation, and all exterior projects must conform to any development standards and guidelines adopted by the City Council.

In 1995, the Historic French Park Association created the French Park Historic District Architectural Design Guidelines, which clarify the requirements of the Secretary's Standards and assist residents and property owners with the design of new infill development and exterior improvements, including but not limited to rehabilitation and/or additions (Marsh 1995). A "neighborhood review" process requires all exterior improvements and new construction in the French Park Historic District to be reviewed by City Planning staff—for zoning and development standards—and by the Neighborhood Architectural Review Committee. Based on the scope of the improvement project, approval by the HRC and/or the City of Santa Ana Planning Commission may also be required (Santa Ana 2014).

Heninger Park Specific Development No. 40 (SD-40) Development Standards and Architectural Design Guidelines

In 1996, the City Council created the Heninger Park Specific Development No. 40 (SD-40) through adoption of a zoning ordinance, amended in 2006, which delineated the SD-40 boundary, implemented the City's second historic overlay zone, identified SD-40 "project areas," and detailed development standards specifying strict zoning provisions over the SD-40 area. See Figure 5.4-1. These general and specific development standards prescribe permitted uses, allowable minimum gross floor areas, allowable minimum lot sizes, allowable building heights, required yards, general provisions, demolition permits, etc.

Completed in 2006, the Heninger Park Specific Development (SD-40) Architectural Design Guidelines established architectural standards and processes that City staff follows when developing recommendations for the Heninger Park district (Santa Ana Planning Division 2006). These guidelines give official direction for the future development, rehabilitation, and preservation of the Heninger Park district and promote the preservation and enhancement of its historical character and culturally significant structures. They are not intended to be strict development standards and can be interpreted by the City with some flexibility when applied to specific projects.

The guidelines apply to all new infill development projects and all properties within Heninger Park that have been determined to be eligible for or are listed in the City of Santa Ana Register of Historical Properties. All exterior improvements and new infill development projects in Heninger Park must be reviewed by City Planning staff, for zoning and development standards, and the Neighborhood Architectural Review Committee. Based on the scope of the improvement project, approval by the HRC and/or the City of Santa Ana Planning Commission may also be required (Santa Ana Planning Division 2014). Properties within the Heninger Park district that are not listed in Appendix A of the guidelines are subject to the Citywide Design Guidelines.

Citywide Design Guidelines

The Citywide Design Guidelines provide design guidance on repairs and alterations to historical resources, as well as new infill construction in local historic districts. Two chapters of the Citywide Design Guidelines apply

to historical resources—Chapter 8, "Downtown Development Guidelines," and Chapter 13, "Historic Structures Guidelines"—and both are based on the Secretary's Standards (Santa Ana 2006). The "Downtown Development Guidelines" apply to the National Register–listed Downtown Santa Ana Historic District and provide design guidelines for historically significant buildings as well as for additions and new infill development projects. Section 8.4 provides both general guidelines and recommendations for the treatment of various components of a historic building and focuses on rehabilitation, adaptive reuse, and preservation. Section 8.4 also includes a section on seismic retrofit of historic structures and architectural guidelines and focuses on building form and mass, rhythm and proportion, wall and roof articulation, and materials and colors. Chapter 13 applies to all properties listed in the Santa Ana Register and emphasizes preservation, rehabilitation, and adaptive reuse. It covers exterior repairs and alterations, with recommendations for the treatment of historic building materials and components, additions and new accessory buildings, landscaping, and residential lighting. Preservation incentives are also included.

Adaptive Reuse Ordinance

The City has adopted an adaptive reuse ordinance to encourage reuse of historic buildings while maintaining a reasonable level of safety and habitability in conformance with the provisions of the California Health and Safety Code Section 17958.11. The adaptive reuse ordinance provides eligibility criteria for adaptive reuse projects as well as minimum development standards, including residential unit size, commercial/retail space street frontage, common area space, and open space. The adaptive reuse ordinance may be applied to buildings or structures constructed prior to July 1, 1974 or buildings that have been determined Historically significant in a "project incentive area." These areas include the Midtown Specific Plan zoning district (SP-3), the transit zoning code district (SD-84), the North Main Street Corridor on both sides of Main Street from Seventeenth Street to the northern end of MainPlace Drive, and the East First Street Corridor on both sides of First Street from Grand Avenue to Elk Lane. Adaptive reuse projects that comply with the development standards are eligible for certain project incentives that include modification of underlying zoning requirements.

Midtown Specific Plan

In 1996, the City Council adopted the Midtown Specific Plan (SP-3) through adoption of a zoning ordinance that changed the existing zoning of the midtown planning area to SP-3 and included design guidelines and development standards for all properties in the midtown planning area. The specific plan encourages the adaptive reuse of historically or architecturally significant buildings and districts throughout the midtown planning area. The midtown planning area identifies five districts: the civic/professional district, financial district, community and specialty retail district, Broadway corridor district, and Bush Street professional district.

Chapter 4, "Civic/Professional District," identifies historic buildings clustered along Civic Center Drive as site attributes and the Christian Science Church as a development opportunity. Chapter 6, "Community and Specialty Retail District," encourages relocation of historic structures on Main Street, identifying Specialty Row as a development opportunity. Chapter 7, "Broadway Corridor District," and Chapter 8, "Bush Street Professional District," encourage the preservation of scale and character attributed by the historic and architecturally significant structures within those districts.

Community Arts and Cultural Master Plan

The Community Arts and Culture Master Plan was published in 2016 and produced goals and recommended strategies informed by eight themes to guide the future of arts and culture in the city. Goal 7 is to "preserve Santa Ana's unique heritage while creating arts and cultural opportunities through new placemaking initiatives." Under the "placemaking and placekeeping" theme, Recommendation 7.2 is to develop a comprehensive plan for the cultural preservation of the legacy and history of the city, inclusive of historic mural preservation and distinctive architecture and identified several initiatives:

> Initiative 7.2.1. Identify opportunities within the City for Santa Ana Cultural Trails and work with the Historic Commission to install high-quality, artistic plaques and historical markers throughout the city to note local history.
>
> Initiative 7.2.2. Create policies and regulations protecting historic landmarks against developers and provide incentives and tax abatements for historic preservation and restoration. Review the Mills Act processes to ensure more equitable outcomes balancing historic preservation with planned development.
>
> Initiative 7.2.3. Conduct a citywide historic survey, updating the results of the 1980s Heritage OC survey.
>
> Initiative 7.2.4. Identify key buildings in need of seismic retrofitting. Work to pass bond measures that finance building owners to rehabilitate seismically unstable buildings.
>
> Initiative 7.2.5. Identify key Mid-Century architecture and other missing buildings to be added to the City Historical Register that are currently outside of its scope. (Santa Ana 2016)

The Community Arts and Cultural Master Plan assigns the Planning and Building Agency and the Historic Resources Commission the responsibility to lead the implementation of Recommendation 7.2 and associated initiatives.

5.4.1.2 EXISTING CONDITIONS

Prehistoric and Historic Setting

Prehistoric Setting

In what is now Orange County are sites dating from 9,000 to 10,000 years ago (Early Man Period) that show evidence of human presence. Site from the Milling Stone period—6,000 to 1,000 BC—are common in the southern California coastal region between Santa Barbara and San Diego and at many inland locations. During this period, stone chopping, scraping, and cutting tools and projectile points made from locally available raw material were abundant. During the Intermediate period—1,000 BC to 650 AD in Orange County—the orientation shifted toward hunting and maritime subsistence and increased acorn processing. The late prehistoric period in Orange County—650 AD till the European contact in 1769—included introduction of cremation, pottery, and small triangular arrow points.

Historic Setting

Between 1769 and 1821 the Spanish colonized California and established missions, presidios, and pueblos throughout the area (Mission Period). Originally inhabited by indigenous Tongva tribes, the land that is now within the boundaries of Santa Ana fell within the jurisdiction of Mission San Juan Capistrano. In 1810, Spanish Governor for Alto California granted Antonio Yorba and his nephew, Juan Pablo Peralta, permission for ranch settlement and cattle grazing of Rancho Santiago de Santa Ana, encompassing present-day Santa Ana. Landowners largely focused on the cattle industry and devoted large tracts to grazing. In 1821, Mexico gained independence from Spain, ending the Mission Period and transferring rule of Spain's North American territories to Mexico. In 1948, with the Treaty of Guadalupe Hidalgo, California transitioned from Mexico to the United States and was granted statehood in 1850.

In 1869, William H. Spurgeon purchased land from the Grijalva family and presented a formal town plan, keeping Santa Ana as the town name. The town of Santa Ana was established in 1870 as one of the first towns in the Santa Ana basin and became a major commercial center for southern Los Angeles County, with a variety of stores and businesses by the 1880s. The arrival of the Southern Pacific Railroad in 1878 and the Santa Fe Railroad in 1886 paved the way for Santa Ana's first building boom and subsequent population boom. On June 12, 1886, the City of Santa Ana incorporated into Los Angeles County, with a population of 2,000, and in 1889, Santa Ana won the county seat as Orange County separated from Los Angeles County. In 1906, the arrival of the Pacific Electric Railway's Red Car provided a suburban line from Santa Ana to Los Angeles, and by 1910, Santa Ana's steadily growing population reached 8,429, marking Santa Ana as the largest city in Orange County. Many buildings in the downtown area and Santa Ana's oldest neighborhoods were developed during this time.

Historical Resources

Systematic efforts to identify historical resources in Santa Ana began in the late 1970s, when a series of historic resource surveys were undertaken, partially funded by the National Preservation Fund through grants made by the California Office of Historic Preservation. By the turn of the 21st century, "grass roots" efforts by Santa Ana citizens had led to several listings in the National Register, including the Downtown Santa Ana and French Park historic districts and over one hundred local designations. Today, the City has over 650 properties listed on its Register of Historic Properties (Santa Ana, 2020).

The Existing Conditions Database (see Appendix E-a) assembled the information on the built environment historical resources in Santa Ana. Primary sources for this database include the National Park Service (for National Register and other federal designation programs); the Historic Property Data File maintained by the State (for historic resources surveys, Section 106 and tax certification evaluations, national and California designation programs); and the City of Santa Ana (for the Santa Ana Register and Specific Development properties). Since the most recent Historic Property Data File for Orange County was issued in 2012, the Office of Historic Preservation was further consulted to determine if any additional designations were made between 2012 and 2019.

The Existing Conditions Database reveals approximately 2,511 historical resources have been recorded in Santa Ana. Table 5.4-1 provides a breakdown by category.

Table 5.4-1 Historical Resources Recorded in Santa Ana

CHR Code	Definition	Count
1B, 1D, 1S	Listed in the NRHP either individually, as a contributor to a listed historic district, or both. Also listed in CRHR.	230
2D, 2D2, 2D3, 2S	Formally determined eligible for listing in the NRHP by the Keeper, by consensus through a Section 106 process, or by Part I Tax Certification, either individually or as a contributor to a historic district determined eligible for NRHP by the Keeper. Listed in the CRHR.	246
3B, 3D, 3S	Appears eligible for NRHP and/or CRHR either individually, as a contributor to a NRHP eligible district, or both through survey evaluation.	102
5S1	Individual property that is listed or designated locally (i.e., listed in the SAR).	667
5S2	Individual property that is eligible or appears eligible through survey evaluation for local listing or designation, either individually, as a contributor to a district eligible for local listing, or both.	970
Other		
CHL	California Registered Historical Landmark	1
CPHI	California Point of Historical Interest	6
OCHC	Orange County Historical Plaque	2
MA	SAR properties with a Mills Act contract	287
CHR	California Historical Resources	

Source: Chattel Inc., 2020.

Numerous historical properties in Santa Ana have been designated in two or more programs (typically, both listed in the National Register and the Santa Ana Register). Most of these resources with multiple classifications are located in the four historic districts that either have been listed in the National Register (Downtown Santa Ana and French Park), formally determined eligible for listing in the National Register (North Broadway Park), or recognized by the City as Specific Development areas (French Park and Heninger Park). The properties listed in the Santa Ana Register are mapped on Figure 5.4-1. Two properties in Santa Ana have plaques awarded by the Orange County Historical Commission.

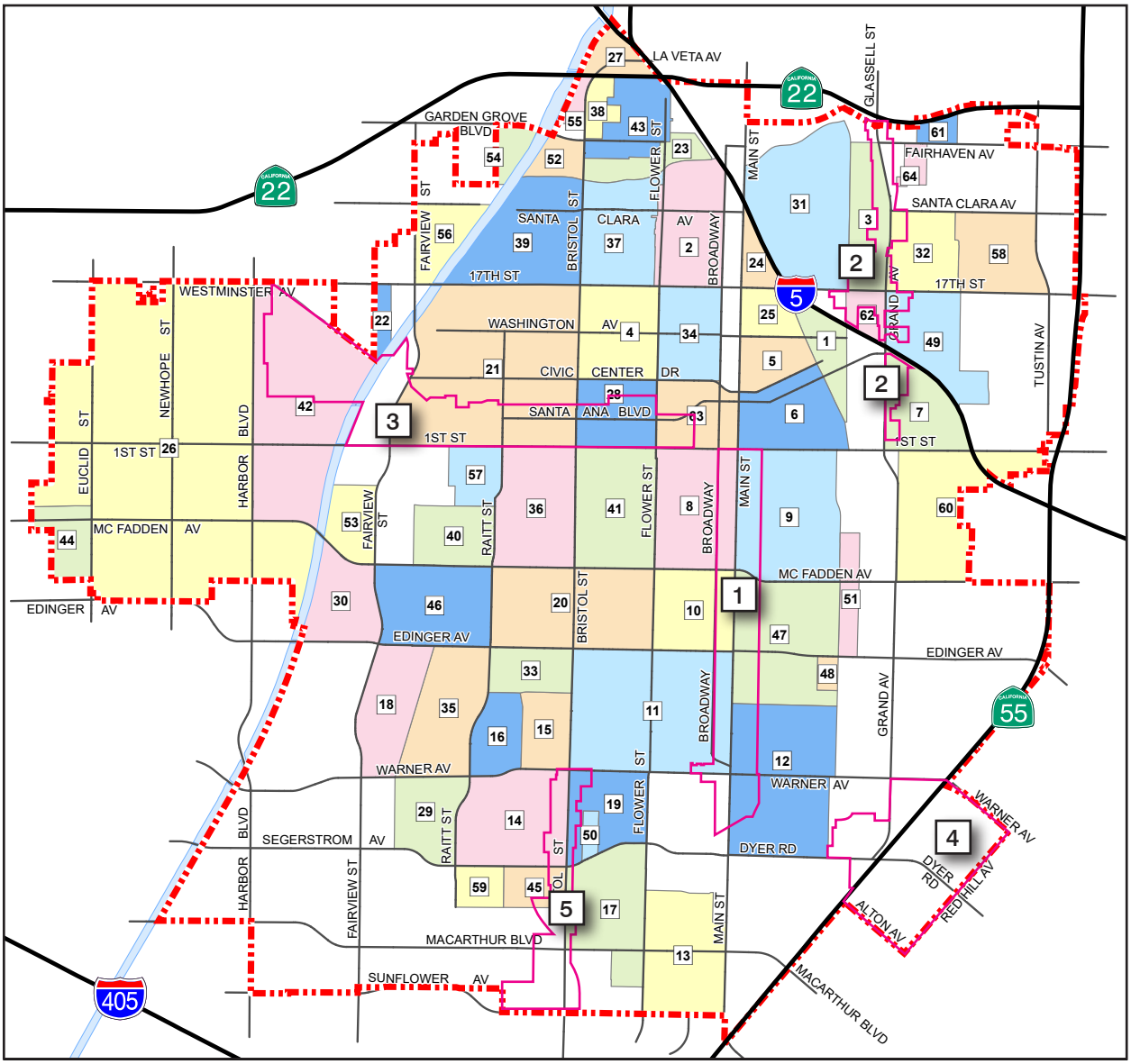
Historical resources in the city would typically fall into eight broad categories defined by function and themes specific to the city—residential, commercial, institutional and infrastructural, agricultural and industrial, architectural, and arts and cultural resources.

- Notable residential resources are concentrated in early residential neighborhoods such as the French Park Historic District, Heninger Park Historic District, Floral Park, Wilshire Square, other Historically Sensitive Neighborhoods and surrounding the Downtown Santa Ana Historic District, although an increasing number of post-World War II properties have also been recognized. Refer to Figure 5.4-1 and Figure 5.4-2.

- Notable commercial resources are concentrated in the Downtown Santa Ana Historic District along Fourth Street and the adjacent streets and along the Main Street and Broadway corridors.

- Notable institutional resources include the Old Orange County Courthouse, Old City Hall, and the YMCA building. A collection of historically and architecturally significant institutional resources remain concentrated around the Downtown Santa Ana Historic District.

Figure 5.4-2 - Neighborhoods Map



Santa Ana Neighborhoods

1. Logan
2. Floral Park
3. Fairhaven
4. Washington Square
5. French Park
6. Lacy
7. Saddleback View
8. Heninger Park
9. Pacific Park
10. Wilshire Park
11. Santa Ana Memorial Park
12. Delhi
13. Sandpointe
14. Thornton Park
15. Bristol/Warner
16. Laurelhurst
17. South Coast
18. Centennial Park
19. Sunwood Central
20. Mid-City
21. Artesia Pilar
22. Mar-Les
23. Fisher Park
24. Santa Ana Triangle
25. French Court
26. Riverview West
27. Northwest
28. Flower Park
29. Morning Sunwood
30. Windsor Village
31. Park Santiago
32. Portola Park
33. Shadow Run
34. Willard
35. Valley Adams
36. Central City
37. West Floral Park
38. Bristol Memory Coalition
39. Riverview
40. Bella Vista
41. Pico-Lowell
42. Santa Anita
43. Morrison/Eldridge Park
44. West Grove Valley
45. Republic Homes
46. New Horizons
47. Madison Park
48. Cedar Evergreen Co-Op
49. Mabury Park
50. Rosewood Baker
51. Cornerstone Village
52. Casa De Santiago
53. Windsor Village North
54. Concord
55. Riverglen
56. Edna Park
57. Casa Bonita
58. Meredith Parkwood
59. Metro Classic
60. Lyon Street
61. Fairbridge Square
62. Grand Sunrise
63. Downtown
64. Young Square

Focus Areas

1. South Main Street
2. Grand Ave/17th Street
3. West Santa Ana Boulevard
4. 55 Fry/Dyer Road
5. South Bristol Street

City of Santa Ana

0 1
Scale (Miles)

Source: City of Santa Ana, 2020

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- Notable agricultural and industrial resources include the Maag Ranch and Maag Ranch House, the former Pacific Electric Substation.

- Notable architects/practitioners in Santa Ana include Fred (Frederick) Eley, Rex D. Weston, Everett E. Parks, Clifford Yates, Frank Lansdown, and Gilbert Stearns. Notable architects/practitioners with work in Santa Ana include W. Horace Austin and Donald Beach Kirby, and federal architects James A. Wetmore and Louis A. Simon. Notable builders/developers in Santa Ana include Allison Honer, Roy Russell, Wesley Farney, William D. Greschner, T. H. Fowler, and Floyd B. Rogers.

- Notable arts and cultural resources include the Walkers Orange County Theater (Fox West Coast Theater), the Yost Theater/Ritz Hotel, and the Charles Bowers Memorial Museum.

Historical resources in Santa Ana reflect a range of historic contexts, property types, dates, and architectural styles.

- Association with significant historic trends or patterns include properties that reflect the city's bygone agricultural era, early settlement and community development, early or long-lived commercial enterprises or centers, and important civic and institutional buildings and organizations.

- Association with historic personages include properties linked to people who played prominent roles in Santa Ana's past, including City officers and local attorneys, doctors, and other professionals and businessmen.

- The vast majority of designated or identified properties are single-family dwellings, most of which were determined significant on the basis of intact representation of an architectural style or period. The most prevalent architectural styles are the period revivals of the 1920s and 1930s, but a substantial minority represent the styles of the Victorian era and the early 20th century, including the Craftsman style. Newly historic postwar homes may eventually match period revivals in terms of numbers. Several neighborhoods retain concentrations of historic properties, including Floral Park, French Park, Heninger Park, Wilshire Square, and others.

Focus Areas

South Main Street

Extending from First Street south nearly to Dyer Road, this commercial corridor contains a mix of low-rise, one- and two-story commercial and residential properties predominantly dating from the Craftsman period (early 1900s) through the post-war period (1950s). The focus area also encompasses residential blocks east and west of South Main Street between Broadway on the west and Orange Avenue on the east. A preliminary desktop survey, using online street views and assessor data (for dates of construction) suggests that this area contains both potential and listed (e.g., 100 to 110 South Main Street) historical resources.

Grand Avenue / 17th Street

This irregularly shaped area follows Grand Avenue from just north of 1st Street to the City boundary north of Fairhaven Avenue. It is broken into two parts by Interstate 5. A mixed-use corridor with three lanes of traffic in each direction, Grand Avenue is characterized primarily by buildings dating from the postwar period and by large swaths of paved surface parking and other open space. The preliminary desktop survey suggests that this area has a low potential for built environment historical resources.

West Santa Ana Boulevard

With West Santa Ana Boulevard as its eastern spine, this focus area follows the street from Ross Street on the east to Raitt Street on the west and then encompasses a wedge-shaped area that continues to the west and north as far as Figueroa Street. West 1st Street is the southern boundary east of the Santa Ana River, where it jumps to West 5th Street. The area follows the planned route of the Orange County Streetcar and includes the Orange County jail and coroner's facilities, residential, office, and industrial uses as well as the Willowick Golf Course and the campuses of four primary, middle, and secondary schools. Some of Santa Ana's oldest homes are located along West 2nd and 3rd Streets (e.g., 1078 and 1220 West 2nd Street, 1410 West 3rd Street, all listed in the Santa Ana Register), with construction dates beginning in the late nineteenth century. The eastern portion of this focus area appears to contain several listed and potential historical resources.

55 Freeway/ Dyer Road

Lying at the southeastern boundary of the city and bisected by the SR-55, this irregularly shaped area contains office and commercial buildings dating from the 1960s through the 1980s. It is unlikely to contain built environment historical resources.

South Bristol Street

This corridor spans the blocks between Warner Avenue on the north and the city boundary at Sunflower Avenue on the south. Incorporating both commercial and medium density residential uses, the area was largely improved in the 1960s and 1970s. It has a low potential to contain built environment historical resources.

Archaeological Resources

The California Historical Resources Information System records search indicates that 23 archaeological resources were previously recorded within 0.5 mile (0.8 km) of the plan area. Of these resources, eight were within the plan area—four prehistoric sites, one multicomponent site, and three historic isolates.

The four prehistoric sites include habitation debris sites and lithic scatters.

- **Site CA-ORA-1514 (P-30-001514)** was recorded in 1999 and consisted of a prehistoric shell scatter with no other associated artifacts. The site was noted to be a disturbed surface scatter in an open lot with buildings in the surrounding area, with no determination of a subsurface component. It is possible that intact subsurface deposits are still present within the site boundary.

- Site CA-ORA-301 (P- 30-000301) was also recorded in 1971 and consisted of a subsurface lithic deposit up to 6 feet (1.8 m) below the surface. The site is noted as being completely paved over.
- **Site CA-ORA-353 (P-30-000353)** was recorded in 1972 and is adjacent to CA-ORA-300. The site was recorded as a prehistoric lithic scatter, and the area has been partially developed for housing.
- **Site CA-ORA-392 (P-30-000392)** was recorded in 1973 after the development of a housing project, with shell midden visible on the surface around the existing homes. The record notes that lithic artifacts were recovered by the local residents.

None of these sites have been updated since their initial recordation, and it is possible that intact subsurface deposits are still present within the site boundaries. The area surrounding CA-ORA-300 and 353 should be considered particularly sensitive due to the previous discovery of Native American burials.

Site CAORA- 300H (P-30-000300) is a multicomponent site that was recorded in 1971 during the construction of an apartment complex. Identified site components included five prehistoric burials, a prehistoric midden deposit, and some historical materials associated with a historical walnut grove and a historical residence.

While the review of ethnographic and historical maps does not indicate the presence of any specific Native American archaeological resources, the proximity of mapped locations of settlements in the vicinity of the plan area indicate a high sensitivity. The presence of the Santa Ana River, a permanent water source that connects the closest mapped Native American villages, and numerous springs mapped throughout the area on the rancho plat maps indicate that there is likely a high sensitivity for Native American archaeological resources throughout the plan area. This is supported by the identification of several prehistoric sites composed of habitation debris and lithic materials. Furthermore, consultation with the Gabrielino Tribe indicated that portions of the City are located within cultural and historical sensitive areas.

A number of historical features, including structures related to the ranchos, 19th-century housing tracts, irrigation features, and heavy and light rail lines, are mapped within the plan area. While it is unlikely that some of those features are currently intact, remains of the structures and related subsurface components, such as refuse dumps, privies, etc., may still be present. The irrigation features that were decommissioned may have accumulated residential and commercial refuse prior to being filled in, a common practice observed archaeologically. For the decommissioned light rail features, segments of rail ties may still be intact beneath current road surfaces, and remains of features related to the rail line, such as signal foundations, refuse deposits, and depot foundations, may still be present. Though confirmation of the continued presence of the structures within the historical housing tracts was not pursued, it is likely that historic deposits related to the historic residences may still be present. Due to these factors, the overall sensitivity of the plan area for historical archaeological resources is high.

5.4.2 Thresholds of Significance

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

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

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

C-3 Disturb any human remains, including those interred outside of dedicated cemeteries.

Significant Historical Resource

Generally, a resource shall be considered "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Is associated the with lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history. (PRC § 5024.1; 14 CCR § 4852)

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

According to Section 15064.5 of the State CEQA Guidelines, a project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment. 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. The significance of a historical resource is materially impaired when a project:

- Demolishes or materially alters in an adverse manner the physical characteristics of a historical resource that convey its historical significance and that justify its inclusion or eligibility for inclusion in the California Register of Historical Resources; or
- Demolishes or materially alters in an adverse manner the physical characteristics that account for its inclusion in a local register of historical resources pursuant to PRC Section 5020.1(k) or its identification in a historical resources survey meeting the requirements of PRC Section 5024.1(g), 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

- Demolishes or materially alters in an adverse manner the physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

Generally, a project that follows the Secretary's Standards shall be considered mitigated to a less than significant impact on the historical resource.

Significant Archeological Resource

A significant prehistoric archaeological impact would occur if grading and construction activities result in a substantial adverse change to archaeological resources determined to be "unique" or "historic." "Unique" resources are defined in PRC Section 21083.2; "historic" resources are defined in PRC Section 21084.1 and CEQA Guidelines Section 15126.4.

PRC Section 21083.2(g) states: As used in this section, "unique archaeological resource" means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

A. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;

B. Has a special and particular quality, such as being the oldest of its type or the best available example of its type; or

C. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

5.4.3 Regulatory Requirements and General Plan Update Policies

5.4.3.1 REGULATORY REQUIREMENTS

RR CUL-1 California Health and Safety Code Section 7050.5 requires that if human remains are discovered within the proposed project site, disturbance of the site shall halt and remain halted until the coroner has investigated the circumstances, manner, and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes or has reason to believe the human remains to be those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission.

RR CUL-2 Any improvements or alterations to a property on the Santa Ana Register of Historic Properties, as well as contributing properties in a historic district, as specified by Chapter 30 of the City's municipal code, must meet the Secretary of Interior Standards for Rehabilitation

and require a Certificate of Appropriateness. Major alterations, relocations, or demolitions are considered for approval by the Historic Resources Commission.

RR CUL-3 Any improvements or alterations to a property within the French Park Historic District shall abide by the standards for all exterior rehabilitation and new infill development projects as stated in the French Park Historic District Specific Development No. 19 (SD-19) Development Standards and Architectural Design Guidelines.

RR CUL-4 Any improvements or alterations to a property within the Heninger Park Specific Development shall abide by the standards for all exterior rehabilitation and new infill development projects as stated in the Heninger Park Specific Development No. 40 (SD-40) Development Standards and Architectural Design Guidelines.

RR CUL-5 Any alteration or alterations to historical resources within the city shall abide by the citywide Design Guidelines.

RR CUL-6 The adaptive reuse of any historic buildings in the city shall abide by the requirement of the City's Adaptive Reuse Ordinance (Santa Ana Municipal Code, Chapter 41, Article XVI.II, Sec. 41-1652).

5.4.3.2 GENERAL PLAN UPDATE POLICIES

The following are relevant policies of the Santa Ana General Plan Update that may contribute to reduce potential impacts to cultural resources as a result of implementation of the proposed project.

Community Element

- **Policy 1.1 Access to Programs.** Provide and maintain access to recreational and cultural programs within walking distance of residential areas.
- **Policy 1.3 Equitable Programs.** Encourage cultural programs and activities of local interest that are inclusive and affordable to all.
- **Policy 1.7 Connections to Facilities.** Support efforts to connect residents and visitors to local and regional cultural, educational, and natural environments.
- **Policy 1.9 Art and Cultural Programming.** Promote art and cultural programs of local interest to provide educational and cultural awareness opportunities.
- **Policy 1.11 Program Incentives.** Incentivize use of privately owned property to promote recreation, health, wellness, and culture programs.

Economic Prosperity Element

- **Policy 3.1 Leverage Historic and Cultural Assets.** Market the City's historic and cultural assets to increase the attraction of businesses and their employees to Santa Ana's places and destinations.

- **Policy 3.11 Improve Image.** Create vibrant public spaces through arts and culture projects that enhance urban quality of life, expand the tax base, and improve regional and community image.

Historic Preservation Element

- **Policy 1.1 Architectural and Design Standards.** Preserve unique neighborhoods and structures in Santa Ana through implementation of the Citywide Design Guidelines and historic preservation best practices.

- **Policy 1.2 Federal Standards for Rehabilitation.** Ensure rehabilitation of historic buildings comply with the Secretary of Interior's Standards for the Treatment of Historic Properties and that new construction in historic districts is compatible with context.

- **Policy 1.3 Historic Districts and Design Standards.** Explore opportunities to preserve neighborhoods with largely intact historic buildings and character through the creation of historic districts or neighborhood design standards.

- **Policy 1.4 Protecting Resources.** Support land use plans and development proposals that actively protect historic and cultural resources.

- **Policy 1.5 Structure and Systems Maintenance.** Encourage maintenance, care, and systems upgrades of historic resources to avoid the need for major rehabilitation, prevent loss of historic resources, and remediate health concerns such as lead based paint and mold.

- **Policy 1.6 Lead by Example.** Ensure that all City-owned historic resources and cultural facilities reflect exceptional architecture and historically appropriate features to celebrate Santa Ana as a world-class city.

- **Policy 1.7 Preserving Human Element.** Encourage participation in oral history programs to capture Santa Ana's historic and cultural narrative.

- **Policy 1.8 Reuse of Historic Buildings.** Support flexible land use standards to facilitate the adaptive reuse of historic buildings with a variety of economically viable uses, while minimizing impacts to the historic value and character of sites and structures.

- **Policy 1.9 Historic Downtown.** Strengthen the image and identity of Downtown through unifying design and architectural themes that are compatible with existing historic fabric.

- **Policy 2.1 Resource Stewardship.** Expand community outreach to educate property owners and businesses regarding responsibilities and stewardship requirements of the City's historic resources.

- **Policy 2.2 Educational Awareness.** Provide educational opportunities to foster community awareness and pride in Santa Ana's history.

- **Policy 2.3 Commemorating History.** Support efforts to identify and commemorate historic structures and sites in Santa Ana through murals, plaques, and educational exhibits.

- **Policy 2.4 Local and Regional Partnerships.** Strengthen relationships and programs with local and regional institutions to promote the appreciation, maintenance, rehabilitation, and preservation of Santa Ana's historic and cultural resources.

- **Policy 2.5 Economic Development Tool.** Promote economic development through heritage education and the promotion of tourism.

- **Policy 2.6 Center Core.** Promote Santa Ana's identity as the cultural and historic downtown of Orange County.

- **Policy 3.1 Historic Resource Survey.** Maintain a comprehensive program to inventory and preserve historic and cultural resources.

- **Policy 3.2 Incentivize Preservation.** Support incentive programs that promote restoration, rehabilitation, salvage, and adaptive reuse of historic buildings.

- **Policy 3.3 Accessible Preservation Program.** Explore strategies to promote a historic preservation program that is robust, equitable, and accessible.

- **Policy 3.4 Preservation Program Certification.** Maintain Santa Ana's status as a Certified Local Government (CLG) to further the City's historic resource program and pursue all available funding for preservation.

- **Policy 3.5 Local Preservation Groups.** Collaborate with the Santa Ana Historical Preservation Society, community groups, and individuals to promote public awareness and educational opportunities that highlight historic preservation.

- **Policy 3.6 Staff Development.** Collaborate with local and regional historic preservation groups to maintain a training program that promotes best practices in preservation techniques.

Land Use Element

- **Policy 3.5 Adaptive Reuse.** Encourage the preservation and reuse of historical buildings and sites through flexible land use policies.

Urban Design Element

- **Policy 2.3 New Life for Old Buildings.** Encourage the preservation and reuse of historic and architecturally significant structures to maintain urban fabric and reduce overall energy consumption associated with new construction.

5.4.4 Environmental Impacts

5.4.4.1 METHODOLOGY

Historical Resources

Historical resources and contexts were identified from examination of relevant federal, State, and local documents, including laws and regulations, plans, and databases maintained by the US Department of the Interior (National Park Service) and the California Office of Historic Preservation (OHP); the Santa Ana Register of Historical Properties and other City programs; consultation with City Planning and California OHP staff; and other resources available both online and in archival collections. No field work was performed, nor was a records search conducted at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton, in support of the Historical Resources Technical Report. However, the most recent tabulation of historic properties in Orange County, obtained from the SCCIC, was utilized. More information about how historical resources in Santa Ana were identified is provided in Section 4.1 of the Historical Resources Technical Report (see Appendix E-a). Potential impacts to historical resources were determined in accordance with the thresholds established by CEQA (PRC § 21084.1), the California CEQA Regulations (CCR § 15064.5), and the City.

Archeological Resources

Available literature, historic topographic maps, historic aerial photographs, and records and database searches containing information on archaeological and tribal cultural resources were reviewed. Data sources include the California Historical Resources Information System, California State databases, and map searches encompassing the General Plan area to provide regional context and ensure thorough review of potential archaeological and tribal cultural resources within the General Plan area.

The OHP's system for managing information on archaeological and historic built environment resources and previous studies is known as the California Historical Resources Information System (CHRIS). The CHRIS records are administered through various archaeological information centers responsible for one or more counties. Records for Orange County are managed through the SCCIC. On February 19, 2019, SWCA archaeologist Amber Johnson, conducted a records search of the CHRIS at the SCCIC. The search included any previously recorded archaeological resources within a 0.5-mile radius of the plan area. Historic built resources or buildings, structures, and objects that are 45 years or older were not included in the records search, as they are being addressed in a separate technical report.

In addition to the CHRIS records search, SWCA conducted a review of all available historic USGS 7.5- and 15-minute quadrangle maps depicting the City of Santa Ana. SWCA also reviewed property-specific historical and ethnographic context research to identify information relevant to the plan area. Archival research focused on a variety of primary and secondary materials relating to the history and development of Santa Ana. Some of the sources consulted included historical maps, aerial and ground photographs, building permits, ethnographic reports, soil reports, and other environmental data.

5.4.4.2 IMPACT ANALYSIS

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

Impact 5.4-1: Buildout consistent with the General Plan Update could impact an identified historic resource. [Threshold C-1]

The General Plan Update (GPU) would not be expected to result in direct or indirect impacts to built environment historical resources. The GPU does not entail any physical development that would result in physical demolition, destruction, relocation, or alteration of a historical resource such that the significance of the historical resource would be materially impaired.

However, future development enabled by the GPU could result in significant direct and/or indirect impacts to historical resources in the absence of mitigation. Santa Ana contains 2,511 recorded historical resources, with potential for many more, since the majority of the city's building stock is at least 45 years old. Places in the city affected by zoning changes, increases in buildout square footage, and other aspects of the GPU may contain significant historical resources, either known or yet unidentified. The Existing Conditions Database provides a list of recorded designated and potential historic resources; however, the database is incomplete and out of date. Therefore, it should be consulted for the presence of historical resources but should not be regarded as the sole authority. The CEQA Guidelines Section 15064.5(a)(4) state:

> The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to § 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in § 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code § 5020.1(g) or § 5024.1.

Potential impacts to historical resources resulting from future development activities pursuant to the GPU will depend on where such development occurs and the nature of the proposed activity. As discussed in Chapter 5.1, *Aesthetics*, the French Park Historic District and the Downtown Historic District are outside of the five focus areas. The eastern side of Heninger Park (Specific Development [SD] 40), east of Broadway, falls within the South Main Street Focus Area (see Figure 5.4-1). Generally, with respect to the five focus areas, the South Main Street and West Santa Ana Boulevard areas are the most likely to contain historical resources that could be affected by future development (see Figure 5.4-1); however, in the absence of an intensive level survey of each area, the presence or absence of potential historical resources is not conclusively known. A future development project that uses the Secretary of the Interior's Standards for the Treatment of Historic Properties would be expected to result in a less-than-significant impact on historical resources. Due to the site-specific nature of historic resources, future development projects allowed under the GPU could potentially impact and cause significant adverse impacts to historic resources. Therefore, buildout consistent with the GPU would result in a potentially significant impact.

Level of Significance Before Mitigation: Even with the implementation of RR CUL-1 through CUL-6 and policies in the historic preservation element, land use element, and urban design element, Impact 5.4-1 would still be potentially significant.

Impact 5.4-2: Development in accordance with the General Plan Update could impact archaeological resources. [Threshold C-2]

Development involving ground disturbance within the plan area has the potential to impact known and unknown archaeological resources. Typically, surface-level and subsurface archaeological sites and deposits can be affected by ground-disturbing activities associated with most types of construction. Based on literature review and records searches, eight archaeological resources have been recorded within the plan area, including four prehistoric sites, one multicomponent site, and three historic isolates. The plan area includes many locations that would have been favorable for prehistoric Native American occupation. While most of the plan area has been developed over the course of the twentieth century, buried resources may remain in areas where developments such as parking lots, parks, or structures with shallow foundations have required only minimal ground disturbance. A review of historical and ethnographic maps indicates a moderate likelihood that intact subsurface archaeological resources would be encountered during redevelopment.

Archaeological resources impacts are site specific, but more intensive development can result in cumulative impacts on a regional level and should be considered in addition to individual project impacts on individual sites. As determined by the respective lead agency on a project by project basis, Phase I Cultural Resources studies would be required before ground disturbances and demolition activities are permitted to occur. The study would identify resources on the affected project sites that are, or appear to be, eligible for listing on the National or California Register. Such studies would also recommend mitigation measures to protect and preserve archaeological and tribal cultural resources. Therefore, buildout under the GPU would result in a potentially significant cumulative impact.

Level of Significance Before Mitigation: After implementation of RR CUL-1 and policies under the historic preservation element, Impact 5.4-2 would be potentially significant.

Impact 5.4-3: Development in accordance with the General Plan Update could potentially disturb human remains. [Threshold C-3]

Development in accordance with the GPU would largely be limited to infill sites and previously disturbed land within an urban environment; therefore, potential disturbance of buried human remains is low. However, California Health and Safety Code Section 7050.5, CEQA Guidelines Section 15064.5, and Public Resources Code Section 5097.98 mandate the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

California Health and Safety Code Section 7050.5 requires that in the event that human remains are discovered, disturbance of the development site shall remain halted until the coroner has conducted an investigation into the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or

her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes or has reason to believe the human remains to be those of a Native American, he or she shall contact the Native American Heritage Commission within 24 hours. Compliance with existing law would ensure that impacts to human remains would be less than significant.

Level of Significance Before Mitigation: With the implementation of RR CUL-1, Impact 5.4-3 would be less than Significant.

5.4.5 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, some impacts would be less than significant: 5.4-3.

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

- **Impact 5.4-1** Development consistent with the General Plan Update could impact historic resources.
- **Impact 5.4-2** Development consistent with the General Plan Update could impact archeological resources.

5.4.6 Mitigation Measures

Impact 5.4-1

CUL-1 **Identification of Historical Resources and Potential Project Impacts.** For structures 45 years or older, a Historical Resources Assessment (HRA) shall be prepared by an architectural historian or historian meeting the Secretary of the Interior's Professional Qualification Standards. The HRA shall include: definition of a study area or area of potential effect, which will encompass the affected property and may include surrounding properties or historic district(s); an intensive level survey of the study area to identify and evaluate under federal, State, and local criteria significance historical resources that might be directly or indirectly affected by the proposed project; and an assessment of project impacts. The HRA shall satisfy federal and State guidelines for the identification, evaluation, and recordation of historical resources. An HRA is not required if an existing historic resources survey and evaluation of the property is available; however, if the existing survey and evaluation is more than five years old, it shall be updated.

CUL-2 **Use of the Secretary of the Interior's Standards.** The Secretary of the Interior's Standards for the Treatment of Historic Properties shall be used to the maximum extent practicable to ensure that projects involving the relocation, conversion, rehabilitation, or alteration of a historical resource and its setting or related new construction will not impair the significance of the historical resource. Use of the Standards shall be overseen by an architectural historian or historic architect meeting the Secretary of the Interior's Professional Qualification

Standards. Evidence of compliance with the Standards shall be provided to the City in the form of a report identifying and photographing character-defining features and spaces and specifying how the proposed treatment of character-defining features and spaces and related construction activities will conform to the Standards. The Qualified Professional shall monitor the construction and provide a report to the City at the conclusion of the project. Use of the Secretary's Standards shall reduce the project impacts on historical resources to less than significant.

CUL-3 **Documentation, Education, and Memorialization.** If the City determines that significant impacts to historical resources cannot be avoided, the City shall require, at a minimum, that the affected historical resources be thoroughly documented before issuance of any permits and may also require additional public education efforts and/or memorialization of the historical resource. Though demolition or alteration of a historical resource such that its significance is materially impaired cannot be mitigated to a less than significant level, recordation of the resource will reduce significant adverse impacts to historical resources to the maximum extent feasible. Such recordation should be prepared under the supervision of an architectural historian, historian, or historic architect meeting the Secretary of the Interior's Professional Qualification Standards and should take the form of Historic American Buildings Survey (HABS) documentation. At a minimum, this recordation should include an architectural and historical narrative; archival photographic documentation; and supplementary information, such as building plans and elevations and/or historic photographs. The documentation package should be reproduced on archival paper and should be made available to researchers and the public through accession by appropriate institutions such as the Santa Ana Library History Room, the South Central Coastal Information Center at California State University, Fullerton, and/or the HABS collection housed in the Library of Congress. Depending on the significance of the adversely affected historical resource, the City, at its discretion, may also require public education about the historical resource in the form of an exhibit, web page, brochure, or other format and/or memorialization of the historical resource on or near the proposed project site. If memorialized, such memorialization shall be a permanent installation, such as a mural, display, or other vehicle that recalls the location, appearance, and historical significance of the affected historical resource, and shall be designed in conjunction with a qualified architectural historian, historian, or historic architect.

Impact 5.4-2

CUL-4 For projects with ground disturbance—e.g., grading, excavation, trenching, boring, or demolition that extend below the current grade—prior to issuance of any permits required to conduct ground-disturbing activities, the City shall require an Archaeological Resources Assessment be conducted under the supervision of an archaeologist that meets the Secretary of the Interior's Professionally Qualified Standards in either prehistoric or historic archaeology.

Assessments shall include a California Historical Resources Information System records search at the South Central Coastal Information Center and of the Sacred Land Files maintained by the Native American Heritage Commission. The records searches will determine if the proposed project area has been previously surveyed for archaeological resources, identify and characterize the results of previous cultural resource surveys, and disclose any cultural resources that have been recorded and/or evaluated. If unpaved surfaces are present within the project area, and the entire project area has not been previously surveyed within the past 10 years, a Phase I pedestrian survey shall be undertaken in proposed project areas to locate any surface cultural materials that may be present.

CUL-5 If potentially significant archaeological resources are identified, and impacts cannot be avoided, a Phase II Testing and Evaluation investigation shall be performed by an archaeologist who meets the Secretary of the Interior's Standards to determine significance prior to any ground-disturbing activities. If resources are determined significant or unique through Phase II testing, and site avoidance is not possible, appropriate site-specific mitigation measures shall be undertaken. These might include a Phase III data recovery program implemented by a qualified archaeologist and performed in accordance with the Office of Historical Preservation's "Archaeological Resource Management Reports (ARMR): Recommended Contents and Format" (OHP 1990) and "Guidelines for Archaeological Research Designs" (OHP 1991).

CUL-6 If the archaeological assessment did not identify archaeological resources but found the area to be highly sensitive for archaeological resources, a qualified archaeologist shall monitor all ground-disturbing construction and pre-construction activities in areas with previously undisturbed soil. The archaeologist shall inform all construction personnel prior to construction activities of the proper procedures in the event of an archaeological discovery. The training shall be held in conjunction with the project's initial on-site safety meeting and shall explain the importance and legal basis for the protection of significant archaeological resources. In the event that archaeological resources (artifacts or features) are exposed during ground-disturbing activities, construction activities in the immediate vicinity of the discovery shall be halted while the resources are evaluated for significance by an archaeologist who meets the Secretary's Standards, and tribal consultation shall be conducted in the case of a tribal resource. If the discovery proves to be significant, the long-term disposition of any collected materials should be determined in consultation with the affiliated tribe(s), where relevant; this could include curation with a recognized scientific or educational repository, transfer to the tribe, or respectful reinternment in an area designated by the tribe.

CUL-7 If an Archaeological Resources Assessment does not identify potentially significant archaeological resources but the site has moderate sensitivity for archaeological resources (Mitigation Measure CUL-4), an archaeologist who meets the Secretary's Standards shall be retained on call. The archaeologist shall inform all construction personnel prior to construction activities about the proper procedures in the event of an archaeological discovery. The pre-construction training shall be held in conjunction with the project's initial on-site

safety meeting and shall explain the importance and legal basis for the protection of significant archaeological resources. In the event that archaeological resources (artifacts or features) are exposed during ground-disturbing activities, construction activities in the immediate vicinity of the discovery shall be halted while the on-call archaeologist is contacted. The resource shall be evaluated for significance and tribal consultation shall be conducted, in the case of a tribal resource. If the discovery proves to be significant, the long-term disposition of any collected materials should be determined in consultation with the affiliated tribe(s), where relevant..

5.4.7 Level of Significance After Mitigation

Impact 5.4-1

With fulfillment of the CUL-1 and CUL-2, future development consistent with the General Plan Update would result in a less than significant impact to cultural resources. However, if significant impacts cannot be avoided, the City shall require at a minimum that the affected historical resources are documented consistent with Mitigation Measure CUL-3. The Historical Resources Technical Report determined that unavoidable impacts to historical resources resulting from future development under the General Plan Update will be reduced to the maximum extent feasible, but will still be significant, with implementation of mitigation measure CUL-3. Therefore, the development under the General Plan Update would result in significant and unavoidable impacts.

Impact 5.4-2

Mitigation Measures CUL-4 through CUL-7 were developed to reduce potential individual and cumulative impacts associated with future development and redevelopment. Mitigation Measure CUL-4 requires an archaeological resources assessment be conducted for future development projects to identify any known archaeological resources and sensitivity of the site. Mitigation Measures CUL-5 through CUL-7 detail the next steps required should the archaeological resources assessment identify known resources or determine the site to have high or moderate resource sensitivity. Upon compliance with Mitigation Measures CUL-4 through CUL-7, individual and cumulative impacts to archaeological resources would be reduced to less than significant levels.

5.4.8 References

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5.5 ENERGY

5.5.1 Environmental Setting

Section 21100(b)(3) of the California Environmental Quality Act (CEQA) requires that an environmental impact report (EIR) include a detailed statement setting forth mitigation measures proposed to minimize significant effects on the environment, including, but not limited to, measures to reduce the wasteful, inefficient, and unnecessary consumption of energy. Appendix F of the CEQA Guidelines states that, in order to ensure that energy implications are considered in project decisions, the potential energy implications of a project shall be considered in an EIR, to the extent relevant and applicable to the project. Appendix F further states that a project's energy consumption and proposed conservation measures may be addressed, as relevant and applicable, in the project description, environmental setting, and impact analysis portions of technical sections, as well as through mitigation measures and alternatives. Furthermore, energy-related Appendix G thresholds were added to the latest update to the CEQA Guidelines.

In accordance with Appendices F and G of the CEQA Guidelines, this Program Environmental Impact Report (PEIR) includes relevant information and analyses that address the energy implications of the General Plan Update and summarizes its anticipated energy needs, impacts, and conservation measures. This section describes existing electricity and natural gas supplies and transmission lines available in the City of Santa Ana (City) and its sphere of influence (plan area), and General Plan Update impacts on such supplies and transmission lines. This section also addresses transportation fuels, such as gasoline and diesel fuel. Information found herein, as well as related aspects of the update's energy implications, are discussed in greater detail elsewhere in this PEIR, including Chapter 3, *Project Description*, and Sections 5.2, *Air Quality*, 5.7, *Greenhouse Gas Emissions*, and 5.16, *Transportation.*

5.5.1.1 REGULATORY BACKGROUND

Federal, state, and local laws, regulations, plans, or guidelines related to energy that are potentially applicable to the General Plan Update are summarized herein.

Federal

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 (Public Law 110-140) seeks to provide the nation with greater energy independence and security by increasing the production of clean renewable fuels; improving vehicle fuel economy; and increasing the efficiency of products, buildings, and vehicles. It also seeks to improve the energy performance of the federal government. The act sets increased Corporate Average Fuel Economy (CAFE) standards; the Renewable Fuel Standard; appliance energy efficiency standards; building energy efficiency standards; and accelerated research and development tasks on renewable energy sources (e.g., solar energy, geothermal energy, and marine and hydrokinetic renewable energy technologies), carbon capture, and sequestration (USEPA 2019).

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

The federal government issued new CAFE standards in 2012 for model years 2017 to 2025, which required a fleet average of 54.5 miles per gallon in 2025. However, on March 30, 2020, the United States Environmental Protection Agency (EPA) finalized updated CAFE and greenhouse gas (GHG) emissions standards for passenger cars and light trucks and established new standards, covering model years 2021 through 2026, known as the Safer Affordable Fuel Efficient (SAFE) Vehicles Final Rule for Model Years 2021–2026. However, a consortium of automakers and California have agreed on a voluntary framework to reduce emissions that can serve as an alternative path forward for clean vehicle standards nationwide. Automakers who agreed to the framework are Ford, Honda, BMW of North America, and Volkswagen Group of America. The framework supports continued annual reductions of vehicle GHG emissions through the 2026 model year, encourages innovation to accelerate the transition to electric vehicles, and provides industry the certainty needed to make investments and create jobs. This commitment means that these auto companies will only sell cars in the United States that meet these standards (CARB 2019).

State

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates privately owned electric, natural gas, telecommunications, water, railway, and passenger transportation companies. It is a court and an administrative agency, with both legislative and judicial powers. It may take testimony in the same manner as a court, issue decisions and orders, and cite for contempt and subpoena records of regulated utilities.

California Energy Commission

The California Energy Commission (CEC) was created in 1974 as the state's principal energy planning organization to meet the energy challenges facing the state in response to the 1973 oil embargo. The CEC is charged with six basic responsibilities when designing state energy policy:

- Forecast statewide electricity needs.
- License power plants to meet those needs.
- Promote energy conservation and efficiency measures.
- Develop renewable energy resources and alternative energy technologies.
- Promote research, development, and demonstration.
- Plan for and direct the state's response to energy emergencies.

Renewables Portfolio Standard

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

The California Renewables Portfolio Standard (RPS) Program was established in 2002 under Senate Bill (SB) 1078 (Sher) and 107 (Simitian). The RPS program requires investor-owned utilities, electric service providers, and community choice aggregators to increase the use of eligible renewable energy resources to 33 percent of total procurement by 2020. Initially under the RPS, certain retail sellers of electricity were required to increase

the amount of renewable energy each year by at least 1 percent to reach at least 20 percent by December 30, 2010. Executive Order S-14-08 was signed in November 2008, which expanded the state's Renewable Energy Standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). The CPUC is required to provide quarterly progress reports on progress toward RPS goals. This has accelerated the development of renewable energy projects throughout the state. Based on the third-quarter 2014 report, the three largest retail energy utilities provided an average of 20.9 percent of its supplies from renewable energy sources. Since 2003, 15,565 megawatts of renewable energy projects have started operations (CPUC 2016).

Senate Bill 350

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

Senate Bill 100 (Chapter 312, Statutes of 2018)

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

State Alternative Fuels Plan

Assembly Bill (AB) 1007 requires the CEC to prepare a plan to increase the use of alternative fuels in California. The State Alternative Fuels Plan was prepared by the CEC with the California Air Resources Board and in consultation with other federal, state, and local agencies to reduce petroleum consumption; increase use of alternative fuels (e.g., ethanol, natural gas, liquefied petroleum gas, electricity, and hydrogen); reduce GHG emissions; and increase in-state production of biofuels. The State Alternative Fuels Plan recommends a strategy that combines private capital investment, financial incentives, and advanced technology that will increase the use of alternative fuels; result in significant improvements in the energy efficiency of vehicles; and reduce trips and vehicle miles traveled through changes in travel habits and land management policies. The Alternative Fuels and Vehicle Technologies Funding Program legislation (AB 118, Statutes of 2007) proactively implements this plan (CEC 2007).

Appliance Efficiency Regulations

California's Appliance Efficiency Regulations (California Code of Regulations [CCR] Title 20, Parts 1600–1608) contain energy performance, energy design, water performance, and water design standards for appliances (including refrigerators, ice makers, vending machines, freezers, water heaters, fans, boilers, washing machines, dryers, air conditioners, pool equipment, and plumbing fittings) that are sold or offered for sale in California.

These standards are updated regularly to allow consideration of new energy efficiency technologies and methods (CEC 2017).

Title 24, Part 6, Energy Efficiency Standards

Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2019 (24 CCR 6). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. The 2019 Building Energy Efficiency Standards, which were adopted on May 9, 2018, went into effect starting January 1, 2020.

The 2019 standards move toward cutting energy use in new homes by more than 50 percent and will require installation of solar photovoltaic systems for single-family homes and multifamily buildings of three stories and less (CBSC 2019a). The 2019 standards focus on four key areas: (1) smart residential photovoltaic systems, (2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa), (3) residential and nonresidential ventilation requirements, and (4) nonresidential lighting requirements (CEC 2018a). Under the 2019 standards, new nonresidential buildings will be 30 percent more energy efficient compared to the 2016 standards, and new single-family homes will be 7 percent more energy efficient (CEC 2018b). When accounting for the electricity generated by the solar photovoltaic system, single-family homes would use 53 percent less energy compared to homes built to the 2016 standards (CEC 2018b).

Title 24, Part 11, Green Building Standards

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR 11, known as CALGreen) was adopted as part of the California Building Standards Code. It includes mandatory requirements for new residential and nonresidential buildings throughout California. CALGreen is intended to (1) reduce GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. The mandatory provisions of CALGreen became effective January 1, 2011. On October 3, 2018, the CEC adopted the 2019 CALGreen, which became effective January 1, 2020.

Overall, the code is established to reduce construction waste, make buildings more efficient in the use of materials and energy, and reduce environmental impact during and after construction. CALGreen contains requirements for construction site selection, stormwater control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for verifying that all building systems (e.g., heating and cooling equipment and lighting systems) are functioning at their maximum efficiency (CBSC 2019b).

Heavy-Duty (Tractor-Trailer) GHG Regulation

The tractors and trailers subject to this regulation must either use EPA SmartWay-certified tractors and trailers or retrofit their existing fleet with SmartWay-verified technologies. The regulation applies primarily to owners of 53-foot or longer box-type trailers, including both dry-van and refrigerated-van trailers, and owners of the heavy-duty tractors that pull them on California highways. These owners are responsible for replacing or retrofitting their affected vehicles with compliant aerodynamic technologies and low–rolling resistance tires. Sleeper cab tractors model year 2011 and later must be SmartWay certified. All other tractors must use SmartWay-verified, low–rolling resistance tires. There are also requirements for trailers to have low–rolling resistance tires and aerodynamic devices.

The SmartWay Program is a public-private initiative between the EPA, large and small trucking companies, rail carriers, logistics companies, commercial manufacturers, retailers, and other federal and state agencies. Its purpose is to improve fuel efficiency and the environmental performance (reduction of both GHG emissions and air pollution) of the goods movement supply chains. SmartWay consists of three components:

- **SmartWay Transport Partnership.** Freight shippers, carriers, logistics companies, and other stakeholders partner with EPA to measure, benchmark, and improve logistics operations so they can reduce their environmental footprint.

- **SmartWay Brand.** Through SmartWay technology verification and branding, the EPA has accelerated availability, adoption, and market penetration of fuel-saving technologies and operational practices while helping companies save fuel, lower costs, and reduce adverse environmental impacts.

- **SmartWay Global Collaboration.** The EPA works with a broad range of national and global organizations to harmonize sustainability accounting methods in the freight sector. SmartWay also provides support to global policy makers that wish to model transportation sustainability programs after the SmartWay program (USEPA 2020a).

Through the SmartWay Technology Program, the EPA has evaluated the fuel saving benefits of various devices through grants, cooperative agreements, emissions and fuel economy testing, demonstration projects, and technical literature review. As a result, the EPA has determined that the following types of technologies provide fuel-saving and/or emission-reducing benefits when used properly in their designed applications, and has verified certain products:

- Idling reduction technologies—i.e., less idling of the engine when it is not needed—would reduce fuel consumption.

- Aerodynamic technologies minimize drag and improve airflow over the entire tractor-trailer vehicle. Aerodynamic technologies include gap fairings that reduce turbulence between the tractor and trailer, side skirts that minimize wind under the trailer, and rear fairings that reduce turbulence and pressure drop at the rear of the trailer.

- Low–rolling resistance tires can roll longer without slowing down, which reduces the amount of fuel used. Rolling resistance (or rolling friction or rolling drag) is the force resisting the motion when a tire rolls on a surface. The wheel will eventually slow down because of this resistance.

- Retrofit technologies include things such as diesel particulate filters, emissions upgrades (to a higher tier), etc. that would reduce emissions.

- Federal excise tax exemptions (USEPA 2020b).

Assembly Bill 1493

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

Local

Santa Ana Climate Action Plan

The City adopted its Climate Action Plan (CAP) in December 2015. In 2014, the City Council adopted emissions reduction goals for the CAP. For community-wide GHG emissions, the reduction goal is 15 percent below the baseline year 2008 by 2020, and 30 percent below the baseline year 2008 by 2035. For municipal operations emissions, the reduction goal is 30 percent by 2020 and 40 percent by 2035 (Santa Ana 2015).

Note that since the City adopted the CAP in 2015, California policies have met or surpassed a number of CAP goals (see the previous descriptions of SB 32, AB 197, SB 1383, the State Renewables Portfolio Standard, and the requirement for solar energy facilities on all new homes).

CAP strategies and actions for energy-use reduction are:

- **Property Assessed Clean Energy (PACE) Financing for Commercial Properties.** PACE is an energy-efficiency financing program operated by private contractors in many communities in California. PACE financing is available for a wide range of energy and water-saving measures, and for renewable energy generation. Repayment of loans through the program is made on the property tax bill for the property. The financing can be used for a variety of energy efficiency projects, including air conditioning and heating systems, lighting upgrades, cool roofing materials, and solar installations.

- **Southern California Edison Small and Medium Business Direct Install.** The CPUC authorizes certain energy-efficiency programs through Southern California Edison (SCE). SCE sends trained energy-efficiency contractors to help small businesses (those using up to 199 kilowatts) identify ways to save electricity. SCE provides free upgrades to customers that may include energy-efficient lighting, signage, sensors, refrigeration, sun-blocking window film, and programmable thermostats.

- **Property Assessed Clean Energy Financing for Residential Properties.** PACE will also be applied to residential properties. Projects include air conditioning and furnace upgrades, air duct sealing, insulation, and small solar installations.

- **Solar Photovoltaic Systems for New Private Installs.** Rebates or incentive payments for installation of solar photovoltaic are available as part of the California Solar Incentive program, which is administered by the CEC.

- **Southern California Edison and Southern California Gas Company Residential Programs.** For residential customers, SCE's efficiency programs include rebates for air conditioner replacement, energy-efficient appliances, pool pumps and motors, etc. Southern California Gas Company (SoCalGas) also offers rebates for energy-efficiency upgrades, including furnaces, insulation, and water heaters.

- **Weatherization.** The weatherization program is delivered through the Community Action Partnership and funded through federal grants and local entities. Actions taken in homes can include a number of energy-saving measures, such as air-duct sealing, insulation, window glazing, and tune-up or replacement of air conditioning and heating equipment.

- **Southern California Gas Company Commercial Programs.** For commercial customers, SoCalGas offers rebates for replacement of inefficient equipment, including water heaters, boilers, and food service equipment.

- **Streetlight Purchase and Retrofit.** SCE owns and operates over 11,000 streetlights in Santa Ana. This measure provides for the City to purchase these streetlights and convert them from high-pressure sodium lamps to light-emitting diode.

- **Benchmarking and Retrocommissioning.** Benchmarking is tracking the energy performance of commercial buildings on an ongoing basis. The Energy Star Portfolio Manager is a free tool for benchmarking and gives an energy performance score between 1 and 100. A score of 75, for example, means that the building performs better than 75 percent of similar buildings. Retrocommissioning is testing and tuning building systems to ensure they operate as designed. For this measure, the City would pass an ordinance requiring that all nonresidential buildings larger than 10,000 square feet report their Portfolio Manager results every seven years, and that buildings with a score of less than 75 must complete retrocommissioning.

- **Solar Hot-Water Heating Systems for Laundromats.** SoCalGas currently offers a rebate for commercial installation of solar hot-water heating systems. For this measure, the City will directly contact laundromat owners and encourage them to take advantage of this rebate.

- **Green Business Challenge Program.** A Green Business Challenge establishes friendly competition between businesses to improve performance in energy efficiency, water conservation, waste reduction, and other areas. Businesses receive recognition for participating, and the City recognizes those that achieve the largest GHG emissions reduction.

Santa Ana Municipal Code

Chapter 8, Article XVI of the Santa Ana Municipal Code, Green Building Standards Code, incorporates the California Green Building Standards Code by reference.

5.5.1.2 EXISTING CONDITIONS

Electricity

Southern California Edison

The City is in the SCE service area, which spans much of central and southern California from Mono County on the north, Santa Barbara County on the west, and Orange County and portions of Riverside County on the south (CEC 2015a). Total electricity consumption in SCE's service area in gigawatt-hours (GWh) was 104,407 GWh in 2018 (CEC 2020a).[1] Sources of electricity sold by SCE in 2018, the latest year for which data are available, were:

- 36 percent renewable, consisting mostly of solar and wind
- 4 percent large hydroelectric
- 17 percent natural gas
- 6 percent nuclear
- 37 percent unspecified sources—that is, not traceable to specific sources (SCE 2019)[2]

Estimated Existing Electricity Demand

Total estimated existing (2020) electricity demand in Santa Ana, based on data provided by SCE, is estimated at 1,570,457,233 kilowatt hours (kWh) per year, as shown in Table 5.5-1, *Estimated Existing Electricity Demand.*

Table 5.5-1 Estimated Existing Electricity Demand

Area	Electricity Usage, kWh per year (Subtotal)
City of Santa Ana[1]	
Residential	380,621,219
Nonresidential	1,189,836,014
Total	1,570,457,233

Source:
1 Electricity total makes use of a seven-year (2012–2018) annual electricity consumption average based on data provided by SCE

1 One GWh is equivalent to one million kilowatt-hours.
2 The electricity sources listed herein reflect changes after the 2013 closure of the San Onofre Nuclear Generating Station, which is owned by SCE.

Renewable Energy

In addition to the renewable energy sources obtained by SCE, 1.9 megawatts of solar capacity have been installed in Santa Ana since 2008. These installations are estimated to produce a reduction in GHGs equivalent to 5,751 metric tons of carbon dioxide (CO_2) per year (Santa Ana 2015).

Natural Gas

SoCalGas provides natural gas service in the City of Santa Ana and offers a variety of rebate programs to encourage energy-efficient home improvements and the purchase of energy-saving appliances. It also administers a no-cost, energy-saving installation program regulated by the CPUC. SoCalGas maintains transmission and distribution lines throughout the City.

The service area of SoCalGas spans much of the southern half of California, from Imperial County in the southeast to San Luis Obispo County in the northwest, to part of Fresno County in the north, to Riverside County and most of San Bernardino County in the east (CEC 2015b). Total natural gas supplies available to SoCalGas for years 2018 and 2019 are 3,055 million cubic feet per day (MMcf/day) and 3,385 MMcf/day, respectively (CGEU 2018). Total natural gas consumption in the SoCalGas service area was 722,247 MMcf for 2018, which is equivalent to 1,979 MMcf/day (CEC 2020b).

Existing Estimated Natural Gas Demands

Existing natural gas demands in the City, based on data provided by SoCalGas, are estimated at 48.9 million therms per year, as shown in Table 5.5-2, *Estimated Existing Natural Gas Demand.*

Table 5.5-2 Estimated Existing Natural Gas Demand

Area	Natural Gas Usage, therms per year (Subtotal)
City	
Residential	21,783,050
Nonresidential	27,074,864
Total	48,857,914

Source:
[1] Natural gas total makes use of a five-year (2014–2018) natural gas consumption average based on data provided by SoCalGas.

Transportation Fuels

Table 5.5-3, *Existing Operation-Related Annual Fuel Usage*, shows the fuel usage associated with vehicle miles traveled (VMT) currently generated under existing baseline conditions based on fuel usage data obtained from EMFAC2017 (v. 1.0.2) and VMT data provided by IBI Group (see Volume III, Appendix K to this PEIR). VMT is based on vehicle trips beginning and ending in the city boundaries and from external/internal trips (i.e., trips that either begin or end in the city).

Table 5.5-3 Existing Operation-Related Annual Fuel Usage

	Gas		Diesel		Compressed Natural Gas		Electricity	
	VMT	Gallons	VMT	Gallons	VMT	Gallons	VMT	kWh
Existing Baseline	3,687,441,808	148,001,638	224,263,378	19,896,581	5,115,903	1,576,272	41,450,939	13,850,850

Source: EMFAC2017, version 1.0.2.
Note: VMTs based on daily VMT provided by IBI Group. VMT per year based on a conversion of VMT x 347 days per year to account for less travel on weekend, consistent with CARB statewide GHG emissions inventory methodology (CARB 2008).

5.5.2 Thresholds of Significance

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

E-1 Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

E-2 Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

5.5.3 Regulatory Requirements and General Plan Update Policies

5.5.3.1 REGULATORY REQUIREMENTS

RR E-1 Construction activities will be conducted in compliance with California Code of Regulations Section 2485, which requires that nonessential idling of construction equipment be restricted to five minutes or less.

RR E-2 At least 65 percent of all nonhazardous construction and demolition waste from nonresidential construction associated with future development in the plan area shall be recycled and/or salvaged for reuse in line with the 2016 California Green Building Standards Code Section 5.408 (California Code of Regulations, Title 24, Part 11).

RR E-3 New buildings implemented as part of the General Plan Update are required to achieve the current California Building Energy and Efficiency Standards (California Code of Regulations, Title 24, Part 6) and California Green Building Standards Code (California Code of Regulations, Title 24, Part 11).

RR E-4 Any appliances associated with development in the Plan Area shall meet the requirements of the 2012 Appliance Efficiency Regulations.

RR E-5 Development under the General Plan Update shall support the goals of the renewables portfolio standard, SB 350, and SB 100 to achieve a tiered increase in the use of renewable energy to 60 percent by 2030, and 100 percent by 2045.

RR E-6 State buildings developed as part of the General Plan Update are required to implement the standards set forth in Executive Order S-20-04. The order established energy savings targets for state facilities, declared the "Silver" level of LEED as the minimum performance standard for new buildings, and to required state government to purchase ENERGY STAR products when cost effective.

RR E-7 Development under the General Plan Update shall be in compliance with state and local solid waste regulations including AB 939, AB 341, AB 1327, AB 1826, and Section 5.408 of 2016 California Green Building Standards Code (California Code of Regulations, Title 24, Part 11).

5.5.3.2 GENERAL PLAN UPDATE POLICIES

The following are relevant policies of the Santa Ana General Plan Update, which may contribute to reducing potential energy impacts.

Conservation Element

- **Policy 1.2 Climate Action Plan.** Consistency with emission reduction goals highlighted in the Climate Action Plan shall be considered in all major decisions on land use and investments in public infrastructure.
- **Policy 1.4 Development Standards.** Support new development that meets or exceeds standards for energy-efficient building design and site planning.
- **Policy 1.6 New and Infill Residential Development.** Promote development that is mixed-use, pedestrian-friendly, transit oriented, and clustered around activity centers.
- **Policy 1.8 Promote Alternative Transportation.** Promote use of alternate modes of transportation in the City of Santa Ana, including pedestrian, bicycling, public transportation, car sharing programs and emerging technologies.
- **Policy 1.9 Public Investment Alternative Transportation Infrastructure.** Continue to invest in infrastructure projects that support public transportation and alternate modes of transportation in the City of Santa Ana, including pedestrian, bicycling, public transportation, car sharing programs, and emerging technologies.
- **Policy 1.10 Transportation Management.** Continue to support and invest in improvements to the City's Transportation Management System, including projects or programs that improve traffic flow and reduce traffic congestion.
- **Policy 1.11 Public Investment in Low- or Zero Emission Vehicles.** Continue to invest in low-emission or zero-emission vehicles to replace the City's gasoline powered vehicle fleet and to transition to available clean fuel sources such as bio-diesel for trucks and heavy equipment.
- **Policy 1.12 Sustainable Infrastructure.** Encourage the use of low or zero emission vehicles, bicycles, non-motorized vehicles, and car-sharing programs by supporting new and existing development that

includes sustainable infrastructure and strategies such as vehicle charging stations, drop-off areas for ride-sharing services, secure bicycle parking, and transportation demand management programs.

- **Policy 1.14 Transportation Demand Management.** Require and incentivize projects to incorporate Transportation Demand Management (TDM) techniques.
- **Policy 3.1 Interagency Coordination.** Consult with regional agencies and utility companies to pursue energy efficiency goals and expand renewable energy strategies.
- **Policy 3.2 Education Programs.** Support education programs to provide information on energy conservation and alternatives to non-renewable energy sources.
- **Policy 3.3 Development Patterns**. Promote energy efficient-development patterns by clustering mixed use developments and compatible uses adjacent to public transportation.
- **Policy 3.4 Site Design.** Encourage site planning and subdivision design that incorporates the use of renewable energy systems.
- **Policy 3.5 Landscaping.** Encourage the planting of native and diverse tree species to reduce heat island effect, reduce energy consumption, and contribute to carbon mitigation.
- **Policy 3.6 Life Cycle Costs.** Encourage construction and building development practices that use renewable resources and life cycle costing in construction and operating decisions.
- **Policy 3.7 Energy Conservation Design and Construction.** Incorporate energy conservation features in the design of new construction and rehabilitation projects.
- **Policy 3.8 Energy-Efficient Public Facilities.** Promote and encourage efficient use of energy and the conservation of available resources in the design, construction, maintenance, and operation of public facilities, infrastructure, and equipment.
- **Policy 3.9 Energy Generation in Public Facilities.** Encourage and support the generation, transmission, use, and storage of locally-distributed renewable energy in order to promote energy independence, efficiency, and sustainability.
- **Policy 3.10 Energy Conservation in Public Projects.** Work with businesses and contractors that use energy-efficient practices in the provision of services and equipment for city construction projects.
- **Policy 3.11 Energy-Efficient Transportation Infrastructure.** Continue to support public and private infrastructure for public transportation such as bus routes, rail lines, and the OC Streetcar.

Economic Prosperity Element

- **Policy 2.9 Energy Conservation.** Collaborate with utility providers and regional partners to encourage business and industry to improve performance in energy efficiency, water conservation, and waste reduction.
- **Policy 2.10 Green Business.** Support the growth of a diverse green business sector that facilitates and promotes environmental sustainability and creates a competitive advantage for business attraction activities.

Land Use Element

- **Policy 1.5 Diverse Housing Types.** Incentivize quality infill residential development that provides a diversity of housing types and accommodates all income levels and age groups.
- **Policy 1.6 Transit Oriented Development.** Encourage residential mixed-use development, within the City's District Centers and Urban Neighborhoods, and adjacent to high quality transit.
- **Policy 1.7 Active Transportation Infrastructure.** Invest in active transportation connectivity between activity centers and residential neighborhoods to encourage healthy lifestyles.
- **Policy 2.5 Benefits of Mixed Use.** Encourage infill mixed-use development at all ranges of affordability to reduce vehicle miles travelled, improve jobs/housing balance, and promote social interaction.
- **Policy 2.10 Smart Growth.** Focus high density residential in mixed-use villages, designated planning focus areas, Downtown Santa Ana, and along major travel corridors.
- **Policy 4.3 Sustainable Land Use Strategies.** Encourage land uses and strategies that reduce energy and water consumption, waste and noise generation, air quality impacts, and light pollution.
- **Policy 4.4 Natural Resource Capture.** Encourage the use of natural processes to capture rainwater runoff, sustainable electric power, and passive climate control.
- **Policy 4.5 VMT Reduction.** Concentrate development along high-quality transit corridors to reduce vehicle miles traveled and transportation related carbon emissions.

Open Space Element

- **Policy 1.6 Sustainable Landscape.** Promote citywide use of drought tolerant landscape and development practices for wise water use and energy consumption.

Public Services Element

- **Policy 1.7 Sustainable Practices.** Use sustainable and energy efficient building and maintenance practices as part of the development or rehabilitation of any public facility or capital improvement.

Urban Design Element

- **Policy 1.6 Active Transportation Infrastructure.** Support the creation of citywide public street and site amenities that accommodate and promote an active transportation-friendly environment.
- **Policy 2.10 Greening the Built Environment.** Promote planting of shade trees and require, where feasible, site design that uses appropriate tree species to shade parking lots, streets, and other facilities with the goal of reducing the heat island effect.
- **Policy 2.11 Sustainable Practices.** Encourage sustainable development through the use of drought tolerant landscaping, permeable hardscape surfaces, and energy efficient building design and construction.
- **Policy 3.10 Coordinated Street Improvement Plans.** Coordinate citywide landscape medians and street trees with land use plans and development projects.
- **Policy 5.4 Intersections for all Travel Modes.** Strengthen active transportation connections and amenities at focal intersections to promote a pleasant and safe experience for non-motorized forms of travel.

5.5.4 Environmental Impacts

5.5.4.1 METHODOLOGY

Based on CEQA Guidelines, Appendix F, Energy Conservation, to ensure energy implications are considered in project decisions, CEQA requires that EIRs include a discussion of the potential impacts of proposed projects with particular emphasis on avoiding or reducing wasteful, unnecessary, or inefficient use of energy resources, as applicable. Environmental effects may include a proposed project's energy requirements and its energy-use efficiencies by amount and fuel type during demolition, construction, and operation; the effects of a proposed project on local and regional energy supplies; the effects of a proposed project on peak and base period demands for electricity and other forms of energy; the degree to which a proposed project complies with existing energy standards; the effects of a proposed project on energy resources; and the proposed project's projected transportation energy use requirements and its overall use of efficient transportation alternatives, if applicable. The energy and fuel usage information provided in this section are based on the following sources.

- **Energy.** Energy use for residential and nonresidential land uses in the city are based on natural gas usage data provided by SoCalGas and electricity usage data provided by SCE, which may be found in Volume II, Appendix C of this PEIR. Natural gas use is based on a five-year average (2014 to 2018) and electricity use is based on a seven-year average (2012 to 2018) to account for fluctuation in annual use from natural variations in climate. Year 2045 residential energy and nonresidential energy forecasts are adjusted for increases in housing and employment, respectively.

- **On-Road Vehicle Fuel Usage.** City fuel usage associated with VMT is based on fuel usage data obtained from EMFAC2017, version 1.0.2, for calendar years 2020 and 2045 and on VMT data provided by IBI Group (see Appendix K to this PEIR).

5.5.4.2 IMPACT ANALYSIS

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

Impact 5.5-1: Implementation of the General Plan Update would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. [Threshold E-1]

Short-Term Construction Impacts

Development projects constructed under the General Plan Update would create temporary demands for electricity. Natural gas is not generally required to power construction equipment, and therefore is not anticipated during construction phases. Electricity use would fluctuate according to the phase of construction. Additionally, it is anticipated that most electric-powered construction equipment would be hand tools (e.g., power drills, table saws, compressors) and lighting, which would result in minimal electricity usage during construction activities.

Development projects would also temporarily increase demands for energy associated with transportation. Transportation energy use depends on the type and number of trips, VMT, fuel efficiency of vehicles, and travel mode. Energy use during construction would come from the transport and use of construction equipment, delivery vehicles and haul trucks, and construction employee vehicles that would use diesel fuel or gasoline. The use of energy resources by these vehicles would fluctuate according to the phase of construction and would be temporary. It is anticipated that most off-road construction equipment, such as those used during demolition and grading, would be gas or diesel powered. In addition, all operation of construction equipment would cease upon completion of project construction. Furthermore, the construction contractors are anticipated to minimize nonessential idling of construction equipment during construction, in accordance with Section 2449 of 13 CCR Article 4.8, Chapter 9. Such required practices would limit wasteful and unnecessary energy consumption. Projects within the City would be similar to projects currently in development within Santa Ana. No projects consisting of multiple phases over an extended period are anticipated.

Long-Term Impacts During Operation

Operation of new development projects accommodated under the General Plan Update would create additional demands for electricity and natural gas compared to existing conditions. Operational use of electricity and natural gas would include heating, cooling, and ventilation of buildings; water heating; operation of electrical systems; use of on-site equipment and appliances; and lighting.

Nontransportation Energy

As previously stated, the existing electricity use within the city totals 1,570,457,233 kWh annually. Electrical service to the city is provided by SCE through connections to existing off-site electrical lines and new on-site infrastructure. As shown in Table 5.5-4, *Year 2045 Forecast Electricity Consumption*, by horizon year 2045, electricity use in the city would increase by 260,755,497 kWh/year, or approximately 17 percent, from existing conditions.

Table 5.5-4 Year 2045 Forecast Electricity Consumption

Area	Electricity Usage, kWh per year (Subtotal)		
	Existing Baseline[1]	Horizon Year 2045 Forecast[2]	Net Change
City			
Residential	380,621,219	555,787,557	175,166,337
Nonresidential	1,189,836,014	1,275,425,174	85,589,160
Total	1,570,457,233	1,831,212,730	260,755,497

1 Electricity usage is provided by SCE.
2 Residential energy and nonresidential energy forecasts are adjusted for increases in housing and employment, respectively, in the city and do not account for reductions due to increase in energy efficiency from compliance with the Building Energy Efficiency Standards and CALGreen.

As shown in Table 5.5-5, *Year 2045 Forecast Natural Gas Consumption*, existing natural gas use in the city totals 48,857,914 therms annually. By 2045, natural gas use in the city would increase by 11,972,406 therms annually, or approximately 25 percent, from existing conditions.

Table 5.5-5 Year 2045 Forecast Natural Gas Consumption

Area	Natural Gas Usage, therms per year (Subtotal)		
	Existing Baseline[1]	Horizon Year 2045 Forecast[2]	Net Change
City			
Residential	21,783,050	31,807,865	10,024,814
Nonresidential	27,074,864	29,022,456	1,947,592
Total	48,857,914	**60,830,320**	**11,972,406**

1 Natural gas usage data provided by SoCalGas.
2 Residential energy and nonresidential energy forecasts are adjusted for increases in housing and employment, respectively, in the city and do not account for reductions due to increase in energy efficiency from compliance with the Building Energy Efficiency Standards and CALGreen.

While the electricity and natural gas demand for the city would increase compared to existing conditions, developments accommodated under the General Plan Update would be required to comply with the current and future updates to the Building Energy Efficiency Standards and CALGreen, which would contribute in reducing the energy demands shown in Tables 5.5-3 and 5.5-4. New and replacement buildings in compliance with these standards would generally have greater energy efficiency than existing buildings. It is anticipated that each update to the Building Energy Efficiency Standards and CALGreen will result in greater building energy efficiency and move closer toward buildings achieving zero net energy.

In addition to the Building Energy Efficiency Standards and CALGreen, the General Plan Update includes the goals and policies to increase energy efficiency and reduce wasteful, inefficient use of energy resources. The

conservation element policies focus on coordinating with agencies to pursue energy-efficient goals and strategies, promoting energy-efficient development patterns and site designs, and expanding renewable energy strategies (policies 3.1, 3.3, 3.4, 3.7, 3.8, 3.9, 3.10). The economic prosperity element, policy 2.9, suggests collaborating with utility providers and regional partners to encourage energy efficiency in business and industry. The land use element, policy 4.3, will encourage land use strategies that reduce energy while the public services element, policy 1.7, and urban design element, policy 2.11, will promote use of sustainable and energy-efficient building and maintenance practices through building design, construction, and development. Encouraging sustainable and energy-efficient building practices and using more renewable energy strategies will further reduce energy consumption within the City and move closer toward achieving zero net energy.

Transportation Energy

The growth accommodated under the General Plan Update would consume transportation energy (e.g., gasoline, diesel, compressed natural gas, and electricity) from the use of motor vehicles. Table 5.5-6, *Operation-Related Annual Fuel Usage: Net Change from Existing,* shows the net change in VMT, fuel usage, and fuel efficiency under horizon year 2045 General Plan Update conditions from existing baseline year 2020 conditions and existing uses under year 2045 conditions.

Table 5.5-6 Operation-Related Annual Fuel Usage: Net Change from Existing

Fuel Type	Existing Baseline Year 2020	Existing Year 2045[1]	Project Horizon Year 2045	Net Change from Existing Baseline Year 2020	Net Change from Existing Year 2045
Gasoline					
VMT[2]	3,687,441,808	3,471,552,120	3,505,587,082	(181,854,726)	34,034,962
Gallons	148,001,638	92,891,225	93,801,926	(54,199,711)	910,702
Miles Per Gallon	24.91	37.37	37.37	12.46	0
Diesel					
VMT[2]	224,263,378	291,979,782	294,842,340	70,578,962	2,862,558
Gallons	19,896,581	17,946,794	18,122,744	(1,773,837)	175,950
Miles Per Gallon	11.27	16.27	16.27	5.00	0
Compressed Natural Gas					
VMT[2]	5,115,903	6,570,424	6,634,840	1,518,937	64,416
Gallons	1,576,272	1,928,457	1,947,363	371,092	18,907
Miles Per Gallon	3.25	3.41	3.41	0.16	0
Electricity					
VMT[2]	41,450,393	188,169,702	190,014,511	148,563,572	1,844,808
kWh	13,850,850	50,665,611	51,162,334	37,311,485	496,724
Miles Per kWh	2.99	3.71	3.71	0.72	0
Total VMT	3,958,271,482	3,958,272,028	3,997,078,773	38,806,745	38,806,745

Source: EMFAC2017 Version 1.0.2.
Notes: () represents a negative value.
[1] Represents existing uses as they currently exist in baseline year 2020 operating under year 2045 conditions.
[2] Based on daily VMT provided by IBI Group. VMT per year based on a conversion of VMT x 347 days per year to account for less travel on weekend, consistent with CARB statewide GHG emissions inventory methodology (CARB 2008).

As shown in Table 5.5-6, when compared to existing baseline year 2020 conditions, the General Plan Update would result in an overall decrease in VMT (181,854,726 miles) and fuel usage (54,199,711 gallons) for gasoline-powered vehicles while VMT for diesel-, compressed natural gas-, and electric-powered vehicles would increase. However, although VMT for diesel-powered vehicles would increase by 70,578,962 miles, overall fuel usage would decrease by 1,773,837 gallons and fuel efficiency would increase by 5 miles per gallon (mpg). While VMT and fuel usage for compressed natural gas- and electric-powered vehicles would both increase, the efficiency of these vehicles would also increase by 3.41 mpg and 3.71 mpg, respectively, compared to 2020 conditions. The decrease in VMT and fuel usage for gasoline-powered vehicles and increase in VMT and fuel usage for electric-powered vehicles are primarily based on the assumption in EMFAC that a greater mix of light-duty automobiles would be electric-powered in future years based on regulatory (e.g., Advanced Clean Cars) and consumer trends. Compared to existing uses under year 2045 conditions, the General Plan Update would result in an increase in VMT and fuel usage for all fuel types (see "Net Change from Existing Year 2045" column). However, the fuel efficiency will be the same, and implementation of the General Plan Update would not result in less efficiency in transportation fuel usage.

The overall VMT as shown in the table would be primarily attributable to the overall growth associated with the General Plan Update. While VMT and fuel usage would generally increase from implementation of the General Plan Update, as shown in Table 5.5-6, fuel efficiency of vehicles under year 2045 conditions would improve compared to baseline year 2020. Additionally, as stated, the fuel efficiency between the General Plan Update and existing uses under horizon year 2045 conditions would be the same. The improvement in fuel efficiency would be attributable to regulatory compliance (e.g., CAFE standards) that trend toward producing cars that are more fuel efficient and the natural turnover of older, less-fuel-efficient vehicles for newer, more-fuel-efficient vehicles. The CAFE standards are not directly applicable to residents or land use development projects, but to car manufacturers. Thus, residents and employees of the City do not have direct control in determining the fuel efficiency of vehicles manufactured and that are made available. However, compliance with the CAFE standards by car manufacturers would ensure that vehicles produced in future years have greater fuel efficiency and would generally result in an overall benefit of reducing fuel usage by providing the population of the City more fuel-efficient vehicle options.

Although VMT associated with electric vehicles (EV) and thus electricity usage would increase under the with-project horizon year 2045 scenario when compared to existing baseline, it is also anticipated that EVs will improve in energy efficiency. In conjunction with the regulatory (i.e., RPS, SB 350, and SB 100) and general trend toward increasing the supply and production of energy from renewable sources, it is anticipated that a greater share of electricity used to power EVs will be from renewable sources in future years (e.g., individual photovoltaic systems, purchased electricity from a Community Choice Aggregation (CCA), and/or purchased electricity from SCE that is generated from renewable sources).

In addition to regulatory compliance that would contribute to more fuel-efficient vehicles and less demand in fuels, the General Plan Update includes policies that will contribute to minimizing overall VMT, and thus fuel usage associated with the City. These proposed policies focus on minimizing VMT through land use and transportation planning efforts that work in conjunction. The General Plan Update includes Conservation Element Policy 1.6 and Land Use Element Policies 1.6, 2.5, 2.10, and 4.5 that focus on situating residential uses near commercial and office land uses and encouraging mixed-used development and placing these

developments near high-quality transit facilities and corridors. Placing residential and nonresidential uses near each other to create self-sustaining communities and neighborhoods and offering mixed-used developments, could result in shorter distances traveled between where people work and live and to amenities. The shorter distances reduce VMT by reducing the average vehicle trip distance traveled. It also encourages people to forego vehicle travel altogether and either bike, walk, or take public transportation, which would also contribute to minimizing VMT. Furthermore, proposed policies in the General Plan Update also include improving public transportation and active transit (e.g., biking and walking) infrastructure in the city (e.g., conservation element policies 1.8, 1.9, 1.10, 1.14, 3.3, and 3.11; urban design element policies 1.6 and 5.4). Improving the public transportation and active transit infrastructure in conjunction with creating more self-sustaining neighborhoods and communities will encourage more non-single-occupancy passenger vehicle travel, which would further contribute to minimizing VMT. Moreover, the General Plan update includes proposed conservation element policies 1.11 and 1.12, which focus on increasing the use of clean fuel and electric vehicles by supporting the installation of electric vehicle infrastructure.

Summary

Overall, regulatory compliance (e.g., Building Energy Efficiency Standards, CALGreen, RPS, and CAFE standards) will increase building energy efficiency and vehicle fuel efficiency and reduce building energy demand and transportation-related fuel usage. Additionally, the General Plan Update includes policies related to land use and transportation planning and design, energy efficiency, public and active transit, and renewable energy generation that will contribute to minimizing building and transportation-related energy demands overall and demands on nonrenewable sources of energy. Implementation of proposed policies under the General Plan Update in conjunction with and complementary to regulatory requirements, will ensure that energy demand associated with growth under the General Plan Update would not be inefficient, wasteful, or unnecessary. Therefore, energy impacts associated with implementation and operation of land uses accommodated under the General Plan Update would be less than significant.

Level of Significance Before Mitigation: With the implementation of RR E-1 through RR E-4, RR E-6, RR E-7, and the policies listed above, Impact 5.5-1 would be less than significant.

Impact 5.5-2: The General Plan Update would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. [Threshold E-2]

California Renewables Portfolio Standard Program

The state's electricity grid is transitioning to renewable energy under California's RPS Program. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. As stated, the RPS goals have been updated since adoption of SB 1078 in 2002. In general, California has RPS requirements of 33 percent renewable energy by 2020 (SB X1-2), 40 percent by 2024 (SB 350), 50 percent by 2026 (SB 100), 60 percent by 2030 (SB 100), and 100 percent by 2045 (SB 100). SB 100 also establishes RPS requirements for publicly owned utilities that consist of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. The statewide RPS requirements do not directly apply to individual development projects, but to utilities and energy providers such as SCE, whose compliance with RPS requirements would contribute to the

State of California objective of transitioning to renewable energy. The land uses accommodated under the General Plan Update would comply with the current and future iterations of the Building Energy Efficiency Standards and CALGreen. Furthermore, as discussed for Impact 5.5-1, the General Plan Update includes conservation element policies 3.1, 3.3, 3.4, 3.6, and 3.9, which would support the statewide goal of transitioning the electricity grid to renewable sources. Therefore, implementation of the General Plan Update would not conflict with or obstruct implementation of California's RPS program, and no impact would occur.

City of Santa Ana Climate Action Plan

Adopted by the City of Santa Ana in December 2015, the CAP provides a comprehensive strategy for the reduction of GHG emissions to improve quality of life and promote economic prosperity throughout the City (Santa Ana 2012). To ensure an effective and efficient CAP, the City would modify measures based on their efficacy and add new measures based on future developments.

The General Plan Update includes goals and policies that increase energy efficiency and use of renewable sources of energy throughout the City. As discussed for Impact 5.5-1, these policies would involve implementing sustainable building and maintenance practices, improving transportation infrastructure and management to support alternate modes of transportation, reducing VMT, and encouraging mixed-use development. In addition, Goal 3 of the conservation element offers policies to reduce consumption of and reliance on non-renewable energy and support the development and use of renewable energy sources. Goal 3 of the public service element has policies to supply, maintain, and expand City services and infrastructure improvements through innovative funding options and sustainable practices. Of these policies, policies 1.12 of the conservation element, 1.7 of the public services element, and 2.11 of the urban design element would encourage sustainable design for building design and development and for transportation infrastructure. These goals and policies would contribute to the reduction in energy demand throughout the city. Thus, implementation of the General Plan Update would not interfere with the goals and measures of the City's CAP, and no impact would occur.

Level of Significance Before Mitigation: With the implementation of RR E-5 and policies listed above, Impact 5.5-2 would be less than significant.

5.5.5 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, some impacts would be less than significant: 5.5-1 and 5.5-2.

5.5.6 Mitigation Measures

No mitigation measures are necessary because there were no significant impacts identified under the applicable thresholds.

5.5.7 Level of Significance After Mitigation

Impacts would remain less than significant.

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5.6 GEOLOGY AND SOILS

This section of the Draft Program Environmental Impact Report (PEIR) evaluates the potential for implementation of the Santa Ana General Plan Update to impact geological and soil resources, paleontological resources, or unique geologic features in Santa Ana and its sphere of influence (plan area). The analysis in this section is based in part on the following technical report(s):

- *Geological Background Technical Report for the General Plan Update*, PlaceWorks, May 2020
- *Paleontological Existing Conditions Technical Report for the City of Santa Ana General Plan Update*, SWCA Environmental Consultants, April 2019

Complete copies of these studies are included in the technical appendices to this Draft PEIR (Volume II, Appendices G-a, G-b)

5.6.1 Environmental Setting

5.6.1.1 REGULATORY BACKGROUND

Santa Ana's regulatory framework for geologic and seismic hazards includes state law, the general plan, and municipal code requirements. These primary regulations are described as follows.

Alquist-Priolo Earthquake Fault Zone

The Alquist-Priolo (AP) Earthquake Fault Zoning Act of 1972 was intended to mitigate the hazard of surface fault rupture by prohibiting the location of structures for human occupancy across the trace of an active fault. The act delineates "Earthquake Fault Zones" along faults that are "sufficiently active" and "well defined." The act also requires that cities and counties withhold development permits for sites within an earthquake fault zone until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting. Pursuant to this act, structures for human occupancy are not allowed within 50 feet of the trace of an active fault. As described later, no AP zones are delineated in Santa Ana.

Seismic Hazard Mapping Act

Earthquakes can cause significant damage even if surface ruptures do not occur. The Seismic Hazard Mapping Act (SHMA) of 1990 was intended to protect the public from the hazards of nonsurface fault rupture from earthquakes, including strong ground shaking, liquefaction, seismically induced landslides, or other ground failure. The California Geological Survey prepares and provides local governments with seismic hazard zone maps that identify areas susceptible to nonsurface fault hazards. SHMA requires responsible agencies to approve projects within seismic hazard zones only after a site-specific investigation to determine if the hazard is present, and the inclusion, if a hazard is found, of appropriate mitigation(s). Orange County has been issued maps showing nonsurface fault hazards, discussed later in this chapter.

The National Environmental Policy Act of 1969

The National Environmental Policy Act of 1969 recognizes the continuing responsibility of the federal government to "preserve important historic, cultural, and natural aspects of our national heritage" ([42 US Code § 4321]). With the passage of the Paleontological Resources Preservation Act, paleontological resources are considered a significant resource, and it is therefore now standard practice to include paleontological resources in National Environmental Policy Act studies in all instances where there is a possible impact.

Antiquities Act of 1906

The Antiquities Act of 1906 (16 US Code §§ 431–433) prohibits appropriation, excavation, or destruction of any object of antiquity, which has been interpreted to include fossils by federal agencies. However, the act does not specifically mention paleontological resources, so agencies are hesitant to interpret this act as governing paleontological resources on lands not administered by federal agencies.

California Building Code

Every public agency enforcing building regulations must adopt the provisions of the California Building Code (CBC), which is Title 24, Part 2 of the California Code of Regulations. The most recent version is the 2019 CBC (effective January 1, 2020). The CBC is updated every three years and provides minimum standards to protect property and public safety by regulating the design and construction of excavations, foundations, building frames, retaining walls, and other building elements to mitigate the effects of seismic shaking and adverse soil conditions. The CBC also contains provisions for earthquake safety based on factors including occupancy type, the types of soil and rock on-site, and the strength of ground shaking with specified probability of occurring at a site. A city may adopt more restrictive codes than state law based on conditions in their community.

Government Codes for Specific Building Types

While the CBC regulates the design and construction of most buildings and structures in a community, certain facilities have additional requirements from state and federal agencies. These include hospitals, schools, essential facilities, and lifeline infrastructure.

- **Acute care hospitals.** These facilities are required to meet the standards of the Alquist Hospital Seismic Act.
- **Public schools.** Public schools that are being constructed or rehabilitated are required to comply with standards under the Field Act, Division of State Architectural standards, and California Education Code Section 17317.
- **Essential facilities.** Essential facilities (police, fire, emergency community facilities, etc.) must comply with the additional standards and requirements of the Essential Services Building Seismic Safety Act.

- **Lifeline infrastructure.** Bridges, utilities, dams/reservoirs, and other infrastructure must adhere to regulations of the Department of Water Resources, Department of Transportation, and Public Utilities Commission.

Mobile Home Parks and the Special Occupancy Parks Act

Mobile homes are prefabricated homes placed on piers, jack stands, or masonry block foundations. Floors and roofs are usually plywood, and outside surfaces are covered with sheet metal. Severe damage can occur when mobile homes fall off their supports, severing utility lines and piercing the floor with jack stands. The California Health and Safety Code governs mobile homes and special-occupancy parks. In 2011, regulations were adopted that address park construction, maintenance, use, occupancy, and design. However, the amendments do not require earthquake-resistant bracing systems. Because the city has nearly 4,000 mobile homes (many of which are occupied by seniors) and mobile homes generally fare poorly in earthquakes, ensuring the safety of mobile home occupants is a concern.

California General Plan Law and General Plan Guidelines

State law (Government Code § 65302) requires cities to adopt a comprehensive long-term general plan that includes a safety element. The safety element is intended to provide guidance for protecting the community from any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence; liquefaction; other seismic hazards identified by Public Resources Code (PRC) Sections 2691 et. seq.; and other geologic hazards known to the legislative body. The seismic safety element must also include mapping of known seismic and geologic hazards from the California Geological Survey and a series of responsive goals, policies, and implementation programs to improve public safety.

California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the state and is codified at PRC Sections 21000 et seq. CEQA requires lead agencies to determine if a proposed project would have a significant effect on the environment, including significant effects on paleontological resources. Guidelines for the implementation of CEQA, as amended (California Code of Regulations §§ 15000 et seq.), define procedures, types of activities, persons, and public agencies required to comply with CEQA and include as one of the questions in the Environmental Checklist: "Will the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" (§ 15023; Appendix G).

Public Resources Code Section 5097.5

Requirements for paleontological resource management are included in PRC Sections 5097.5 and 30244. These statutes prohibit the removal of any paleontological site or feature without permission. As a result, local agencies are required to comply with PRC Section 5097.5 for permit action, construction, and maintenance activities. PRC Section 5097.5 also establishes the removal of paleontological resources as a misdemeanor and requires reasonable mitigation of adverse impacts to paleontological resources from developments on public (state, county, city, and district) lands.

Santa Ana Municipal Code

The Santa Ana Municipal Code and other City development policies and procedures provide guidance on addressing specific geologic and seismic hazards in Santa Ana. Among others, these include:

Chapter 8, Buildings and Structures. These codes address grading standards, excavation, and fills. This also includes compliance with regulations for unreinforced masonry structures in accordance with "Unreinforced Masonry Law" in California Government Code §§ 8875 et seq.

The City of Santa Ana Building Official may put additional requirements on the construction of infrastructure, buildings, and other improvements based on the findings from plan check, soils testing, and geotechnical investigations.

5.6.1.2 EXISTING CONDITIONS

This section describes the local geologic setting and associated seismic and geologic hazards associated with the city's location, topography, soils, and faulting.

Geologic Setting

The City of Santa Ana is on the southern portion of the Downey Plain, a broad alluvial plain that covers the northwestern portion of Orange County (Yerkes et al. 1965). Santa Ana is situated within the Peninsular Ranges Geomorphic Province, which extends approximately 900 miles from the Transverse Ranges and the Los Angeles Basin to the southern tip of Baja California. The province varies in width from approximately 30 to 100 miles. In general, the province consists of a complex of blocks oriented northwest-southeast and separated by similarly trending faults.

Santa Ana is underlain by Holocene and Pleistocene alluvial deposits and early Pleistocene marine deposits (Morton 2004). Below these deposits lie Miocene and late Cretaceous sedimentary rocks. The Santa Ana Mountains rise to 5,700 feet above sea level northeast and east of the City, and the San Joaquin Hills are to the southeast (Google Earth Pro 2019). The Santa Ana River flows through the western portion of the city on its way to the Pacific Ocean to the southwest. Santa Ana is generally flat with a gentle slope toward the southwest (USGS 2015a, 2015b, 2015c, 2015d).

The Peninsular Ranges Geomorphic Province is traversed by a group of subparallel and fault zones trending roughly northwest. Major active fault systems—San Andreas, San Jacinto, Whittier-Elsinore, and Newport-Inglewood fault zones—form a regional tectonic framework consisting primarily of right-lateral, strike-slip movement (Jennings & Bryant 2010). Santa Ana is situated between two major active fault zones—the Whittier-Elsinore Fault Zone to the northeast and the Newport-Inglewood Fault to the southwest. Other potentially active faults near Santa Ana include the Elysian Park blind thrust; Chino-Central Avenue, San Joaquin Hills blind thrust, and San Jose, Cucamonga, Sierra Madre, and Palos Verdes faults (CGS 2019; Cao et al. 2003).

The Richter Scale is used to describe the magnitude of an earthquake. Each one-point increase in magnitude (M) represents a 10-fold increase in earthquake wave size and a 30-fold increase in energy release (strength). For example, an M8 earthquake produces 10 times the ground motion amplitude of an M7 earthquake, 100

times that of an M6 quake, and 1,000 times the motion of a magnitude 5. However, the M8 earthquake is 27,000 times stronger than an M5 quake. Typically, earthquakes of M5 or greater are considered strong earthquakes capable of producing damage.

Table 5.6-1 provides a summary of the key faults that could produce significant earthquakes (exceeding M5) that could impact Santa Ana. The table also includes the maximum associated magnitudes of earthquakes along each fault. Figure 5.6-1 shows the location of fault hazards and their proximity to Santa Ana.

Table 5.6-1 Earthquake Faults Near Santa Ana

Fault	Description of Earthquake Fault Zone	Maximum Hazard
Newport-Inglewood	The Newport-Inglewood Fault Zone consists of a series of disconnected, northwest-trending fault segments which extend from Los Angeles, through Long Beach and Torrance, to Newport Beach and offshore south past Oceanside. Although no major rupture has occurred since the 1933 Long Beach quake (6.4 M), the fault is considered active and is zoned under the Alquist-Priolo Earthquake Fault Zone Act. The fault is located about four miles from the City.	M 7.1
Whittier Fault Zone	The Whittier Fault Zone extends from Whittier Narrows in Los Angeles County, southeasterly to Santa Ana Canyon where it merges with the Elsinore Fault Zone. The Whittier Fault Zone is located about nine miles from the northern edge of the City. The Whittier Fault is active and is zoned under the Alquist-Priolo Earthquake Fault Zone Act.	M 6.8
Elsinore Glen Ivy Segment	The Glen Ivy segment of the Elsinore Fault Zone is located about twelve miles from the City. Dominant movement along this fault is right-lateral strike-slip. The Glen Ivy segment is zoned under the Alquist-Priolo Earthquake Fault Zone Act.	M 6.8
San Joaquin Hills Blind Thrust	Located at depth about a mile southeast of the City, the San Joaquin Hills Blind Thrust Fault is approximately 17 miles long and is characterized by reverse dip-slip movement. This fault is responsible for the uplift of the San Joaquin Hills. The San Joaquin Hills Blind Thrust Fault is considered active and is not zoned under the Alquist-Priolo Earthquake Zone Act.	M 6.6
Chino-Central Avenue	The Chino-Central Avenue Fault branches away from the Elsinore (Glen Ivy) Fault and extends northwest 13 miles through the Prado Basin and into the Puente Hills. Dominant movement along the fault is right-lateral reverse oblique slip. The Chino Fault is about 14 miles northeast of the City and is zoned under the Alquist-Priolo Earthquake Zone Act.	M 6.7
Puente Hills Blind Thrust	Located at depth about ten miles northwest of the City, the Puente Hills Blind Thrust Fault is approximately 27 miles long and is characterized by reverse dip-slip movement. The Puente Hills Blind Thrust Fault is considered active and is no zoned under the Alquist-Priolo Earthquake Fault Zone Act.	M 7.1
Upper Elysian Park Blind Thrust	The Upper Elysian Park Blind Thrust Fault is located at depth about ten miles north of the City. The fault is approximately 12 miles long and is characterized by reverse dip-slip movement. The Upper Elysian Park Blind Thrust Fault is considered active and is not zoned under the Alquist-Priolo Earthquake Fault Zone Act.	M 6.4
San Jose	The San Jose Fault is 12 miles long, extending southwest and west from near the mouth of San Antonio Canyon on the southern front of the San Gabriel Mountains about 21 miles north of the City. The fault is characterized by left-lateral reverse oblique-slip movement, and was responsible for the 1990 M 5.4 Upland earthquake.	M 6.9
Cucamonga	The Cucamonga Fault is the eastward extension of the Sierra Madre Fault Zone and is located 26 miles northeast of the City, extending 17 miles long, from Duncan Canyon to San Antonio Heights along the San Gabriel Mountains. The fault is characterized by reverse dip-slip movement. The Fault is active and within an Alquist-Priolo Earthquake Fault Zone.	M 6.9

Table 5.6-1 Earthquake Faults Near Santa Ana

Fault	Description of Earthquake Fault Zone	Maximum Hazard
San Jacinto	The San Jacinto Fault, located about 36 miles northeast of the City, is considered to be the most active fault in southern California. The fault zone extends 130 miles and is characterized by right-lateral strike-slip movement. The San Jacinto Fault is considered active and is capable of a maximum moment magnitude 6.9 earthquake. The fault is zoned under the Alquist-Priolo Earthquake Fault Zone Act.	M 6.9
Sierra Madre Fault Zone	Located 24 miles north of the City, this fault zone extends 35 miles long, from Claremont and following the southern front of the San Gabriel Mountains to San Fernando. This fault zone is characterized by reverse dip-slip movement. The western portion of the Sierra Madre Fault is zoned under the Alquist-Priolo Earthquake Fault Zone Act.	M 7.2
Palos Verdes	The Palos Verdes Fault is located offshore about 16 miles southwest of the City. The fault zone extends for about 50 miles southeast from the northern front of the Palos Verdes Peninsula. The fault zone is characterized by reverse right-lateral oblique-slip movement. The fault is not zoned under the Alquist-Priolo Earthquake Fault Zone Act.	M 7.3
San Andreas	The San Bernardino and Southern segments of the San Andreas Fault are located about 40 miles northeast of the City. Past work estimates that the recurrence interval for a M 8.0 earthquake along the entire fault zone is 50–200 years, and a 140–200 year recurrence interval for a M 7.0 earthquakes along the southern fault zone segment.	M 7.5+

Source: Cao et al. 2003.

Seismic Hazards

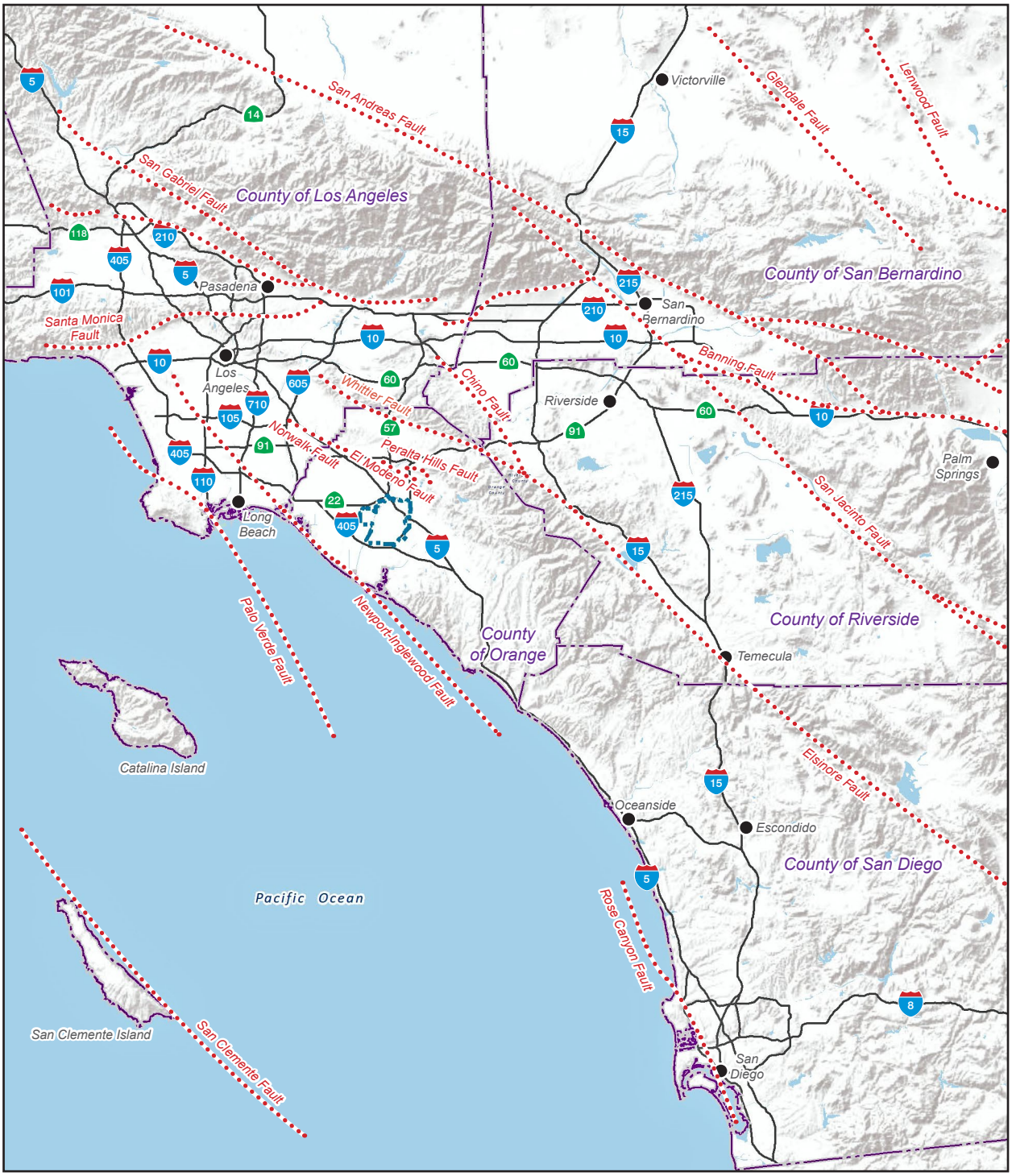
Historically, Santa Ana has only experienced one major destructive earthquake, which was the 1933 M 6.4 Long Beach earthquake, which affected and destroyed many structures in the downtown portion of Santa Ana. In addition, based on a search of earthquake databases of the United States Geological Survey (USGS) National Earthquake Information Center, several major earthquakes (magnitude 5.8 or more) have been recorded within approximately 60 miles of the city since 1769 (USGS 2019). The latest of these were the Northridge earthquake and Granada Hills aftershock in 1994, about 60 miles from the city.

The primary seismic hazards related to earthquakes are summarized.

Surface (Fault) Rupture

Seismic activity has been known to cause surface rupture, or ground displacement, along a fault or within the general vicinity of a fault zone. In accordance with the Alquist-Priolo Earthquake Fault Zoning Act (AP Zoning Act), the State Geologist has established fault zones along known active faults in California. No active surface faults are mapped and zoned under the AP Zoning Act in Santa Ana (CGS 2019).

Figure 5.6-1 - Regional Fault Map



City of Santa Ana

Fault Line

0 20
Scale (Miles)

Note: All fault locations and dimensions are approximate and not all faults are shown.
Source: California Department of Mines and Geology. Preliminary fault activity map of California, 1994.

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Primary ground rupture usually results in a relatively small percentage of the damage caused by an earthquake. Primary fault rupture is rarely confined to one fault; it often spreads out into complex patterns of secondary faulting and ground deformation. Secondary faulting involves a web of interconnected faults that rupture in response to a primary rupture. Secondary ground deformation can include fracturing, shattering, warping, tilting, uplift, and/or subsidence. Such deformation may be relatively confined along the rupturing fault or spread over a large region. Deformation and secondary faulting can also occur without primary ground rupture, as in the case of ground deformation above a blind (buried) thrust fault.

Strong Seismic Ground Shaking

Ground shaking refers to vibration of the ground from an earthquake. Shaking above Magnitude 5 on the Richter Scale is known to damage structures. Earthquakes are common to southern California, and geologic evidence is used to determine the likelihood and magnitude of ruptures along a fault. Peak horizontal ground acceleration (PHGA) values that could be expected in Santa Ana are based on types and characteristics of fault sources, distances and estimated maximum earthquake magnitude, and subsurface site geology. The PHGA estimate depends on the method of determination. The maximum magnitude (Mmax) is considered the largest earthquake expected to occur along a fault and is based in part on fault characteristics (length, style of faulting, and historic seismicity). The Newport-Inglewood Fault is the dominant active fault that could significantly impact the city.

Ground motion will generally amplify as it passes from the bedrock and through the softer, deep alluvial deposits. The PHGA at the surface of a site depends substantially on the thickness of sedimentary deposits beneath the site. Based on USGS estimates for the Santa Ana area and a 1.0-second spectral acceleration, site effects from the geologic units underlying the city may have three times the effect of crystalline bedrock at the same location.

Liquefaction and Related Ground Failure

Liquefaction happens when strong earthquake shaking causes sediment layers that are saturated with groundwater to lose strength and behave as a fluid. This subsurface process can lead to near-surface or surface ground failure. Surface ground failure is usually expressed as lateral spreading, flow failures, ground oscillation, and/or general loss of bearing strength. Sand boils (injections of fluidized sediment) commonly accompany these different types of failure. Liquefaction can damage building foundations, structures, and infrastructure, leading to collapse.

Susceptibility to liquefaction typically depends on: 1) the intensity and duration of ground shaking; 2) the age and textural characteristic of the alluvial sediments; and 3) the depth to the groundwater. Loose, granular materials at depths of less than 50 feet, with silt and clay contents of less than 30 percent, and saturated by relatively shallow groundwater table are most susceptible to liquefaction. These geological conditions are typical in parts of southern California, in valley regions and alluvial floodplains. In Santa Ana, most of the city is in areas that are susceptible to liquefaction, including the southern half of the city and along the margins of Santiago Creek and the Santa Ana River (CGS 2019) (see Figure 5.6-2, *Liquefaction Zones*).

Slope Failure (Landslides)

Landslides are perceptible downward movements of soil, debris, rock, or a combination of these under the influence of gravity. Landslide materials are commonly porous and very weathered in the upper portions and margins of the slide. They may also have open fractures or joints. Slope failures can occur during or after periods of intense rainfall or in response to strong seismic shaking. Landslides are distinguished from minor debris flows because in a landslide, the majority of material moved is bedrock materials, and a minor debris flow is the surface slippage of soil. Fire events in areas of high topographic relief can lead to conditions conducive to debris flows.

Landslides, debris flows, or any movement of earth or rock are most common in areas of high topographic relief, such as steep canyon walls or steep hillsides. Because the entire city is nearly flat, landslides are not a major hazard in Santa Ana (USGS 2015a, 2015b, 2015c, 2015d).

Geologic Hazards

Based on available studies, the geologic hazards most likely in Santa Ana include expansive soils, corrosive soils, and settlement/collapsible soils (to a lesser degree). Each of these potential hazards is discussed below, accompanied with figures where necessary.

Expansive Soils

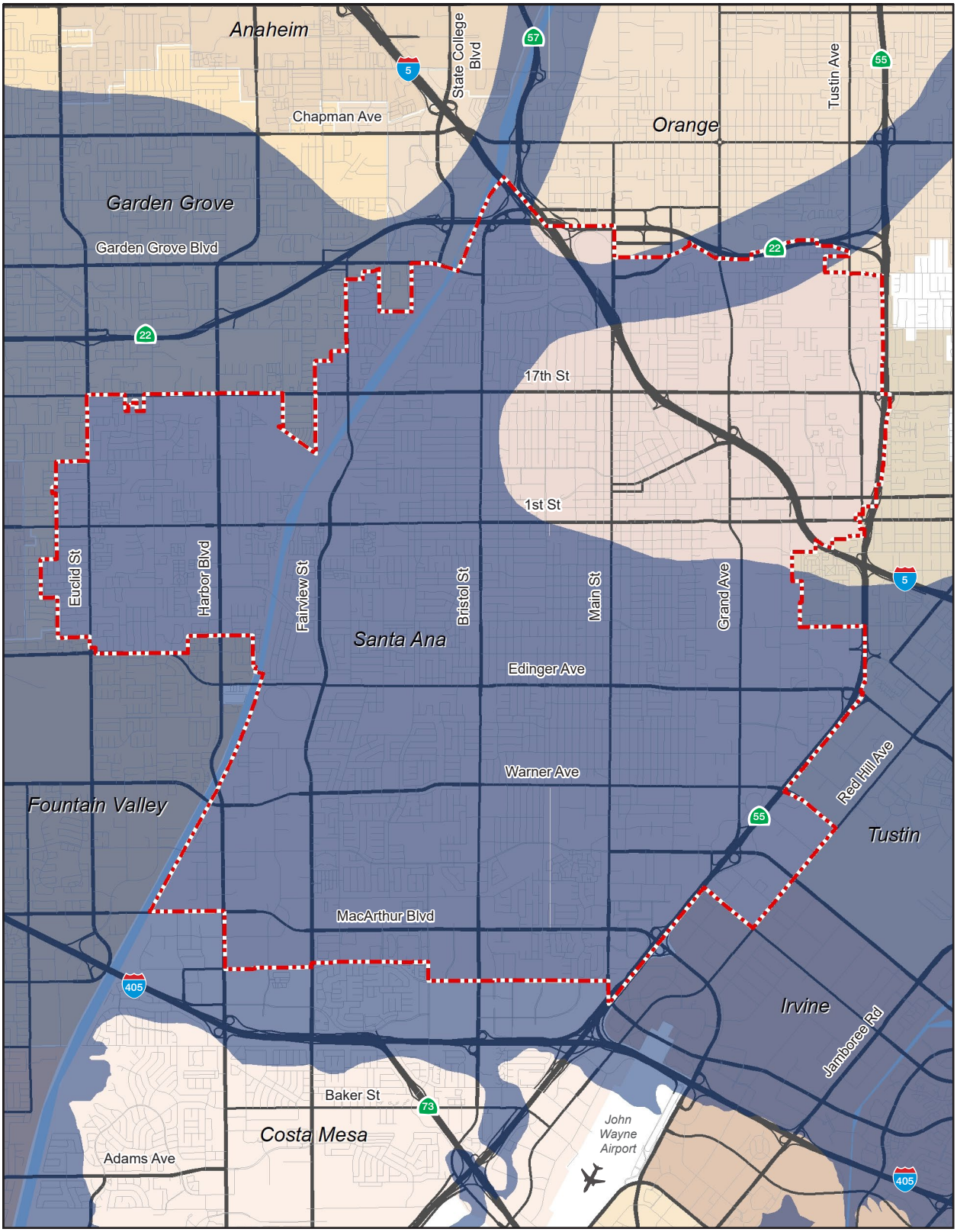
Expansive and collapsible soils are two of the most widely distributed and costly of geologic hazards. Expansive soils will shrink or swell as the moisture content decreases or increases. Expansive soil and rock are typically characterized by clayey material that shrinks as it dries and swells as it becomes wet. Homes, infrastructure, and other structures built on these soils may experience shifting, cracking, and breaking as soils shrink and subside or expand. Expansive soils are also known to cause damage to the foundation of structures.

Based on the presence of alluvial materials in the city, there is some potential for expansive soils throughout Santa Ana (Morton 2004; USDA 1978). Expansive soils are possible wherever clays and elastic silts may be present, including alluvial soils, weathered granitic, and fine-grained sedimentary rocks. Expansive soils are tested prior to grading as part of a soil engineering report—as required by the CBC and the City of Santa Ana—and are mitigated as necessary.

Corrosive Soils

Corrosive soils contain chemical constituents that may cause damage to construction materials such as concrete and ferrous metals. One such constituent is water-soluble sulfate, which, if in high enough concentrations, can react with and damage concrete. Electrical resistivity, chloride content, and pH level are all indicators of a soil's tendency to corrode ferrous metals. High chloride concentrations from saline minerals can corrode metals (carbon steel, zinc, aluminum, and copper). Low pH and/or low resistivity soils could corrode buried or partially buried metal structures.

Figure 5.6-2 - Liquefaction Zones



Liquefaction Zone

City of Santa Ana

0 1
Scale (Miles)

Source: California Geological Survey, 1997 (Newport Beach Quadrangle), 1998a (Anaheim Quadrangle), 1998b (Orange Quadrangle) and 2001 (Tustin Quadrangle). Seismic Hazard Zone Maps.

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Soils throughout the majority of Santa Ana have been found to be highly corrosive to metals and marginally to moderately corrosive to concrete. Typical mitigation for corrosive soil includes corrosion-resistant coatings. Corrosive soils for concrete and/or metals are often addressed through techniques that include cathodic protection, use of special concrete overlays, and other techniques. The City's Engineering Standards require that proposed projects include soil investigations and cathodic protection for metal piping when corrosive soils are encountered.

Land Subsidence

Land sinking or subsidence is generally related to substantial overdraft of groundwater reserves from underground reservoirs. Santa Ana has shown historical subsidence, and it is considered a potential hazard for the City (Riel et al. 2018). Subsidence in Santa Ana does not show a pattern of widespread, irreversible lowering of the ground surface. The probability of subsidence is generally low in the majority of Santa Ana, with the most susceptible areas along the margins of the Santa Ana River and Santiago Creek. Groundwater storage by Orange County Water District and statutory commitments to sustainable groundwater management practices reduce the potential for future land subsidence, and ongoing surveying of the ground surface by Orange County Water District provides a way to verify that their efforts in preventing subsidence are effective (OCWD 2015).

Settlement and/or Collapse

The potential hazard posed by seismic settlement and/or collapse in the city is considered moderate based on the compressibility of the underlying alluvial soils and the presence of shallow groundwater (CGS 2019). Strong ground shaking can cause settlement of alluvial soils and artificial fills if they are not adequately compacted. Because unconsolidated soils and undocumented fill material are present in the City, seismically induced settlement and/or collapse are possible (Morton 2004). Site-specific mass grading and compaction, which would occur as part of future development, would mitigate any potential impacts from settlement and/or collapse in the city.

Paleontological Setting

Paleontological resources are fossils—that is, organisms or fragments, impressions, or traces of organisms preserved in rock. Santa Ana is in the northwestern Peninsular Ranges Geomorphic Province, one of the largest geologic regions in western North America (Norris and Webb 1990). Locally, the project area lies within the alluvial valley of the Santa Ana River on the Perris Block, characterized by widespread alluvial fan deposits originating from the San Gabriel Mountains to the east of the project area and dating to the late Pleistocene. Geologic mapping by Morton and Miller (2006) indicates the surficial geology of Santa Ana is composed of alluvial sediments that range in age from the Holocene to early Pleistocene.

Pleistocene sediments have a rich fossil history in southern California. (SWCA 2019) The most common Pleistocene terrestrial mammal fossils include the bones of mammoth, horse, bison, camel, and small mammals, but other taxa, including lion, cheetah, wolf, antelope, peccary, mastodon, capybara, and giant ground sloth, have been reported, as well as birds, amphibians, and reptiles such as frogs, salamanders, snakes, and turtles. In addition to illuminating the striking differences between southern California in the Pleistocene and today, this abundant fossil record has been vital in studies of extinction, ecology, and climate change.

Although there were no records of fossils from within the plan area, the Natural History Museum of Los Angeles County (LACM) has records of 16 fossil localities within a five-mile radius of the city (Table 5.6-2) with the closest fossil locality approximately 2.5 miles south of the City. Throughout Orange County, extinct Pleistocene animals are well known from alluvial sediments. Columbian mammoths, American mastodons, ground sloths, short-faced bears, American lions, saber-toothed cats, dire wolves, horses, tapirs, ancient bison, long-horned bison, camels, llamas, and dwarf pronghorns have been recovered. Ice Age fossils begin appearing at a depth of 8 to 10 feet below the ground surface in southern California valleys.

Table 5.6-2 LACM Pleistocene-Aged Fossil Localities in the Vicinity of Santa Ana

Locality Number	Depth (in feet below the ground surface)	Specimens
LACM 1339	15	Mammoth, camel
LACM 4219	NA	Sea turtle, camel
LACM 3267	NA	Elephant
LACM 6370	NA	Horse
LACM 1652	NA	Sheep
LACM 4943	8–10	Horse
LACM 65113	6–20	Mammoth, bison
LACM multiple (9)	NA	Sea otter, pallid bat, shrews, pocket gopher

Source: SWCA 2019.

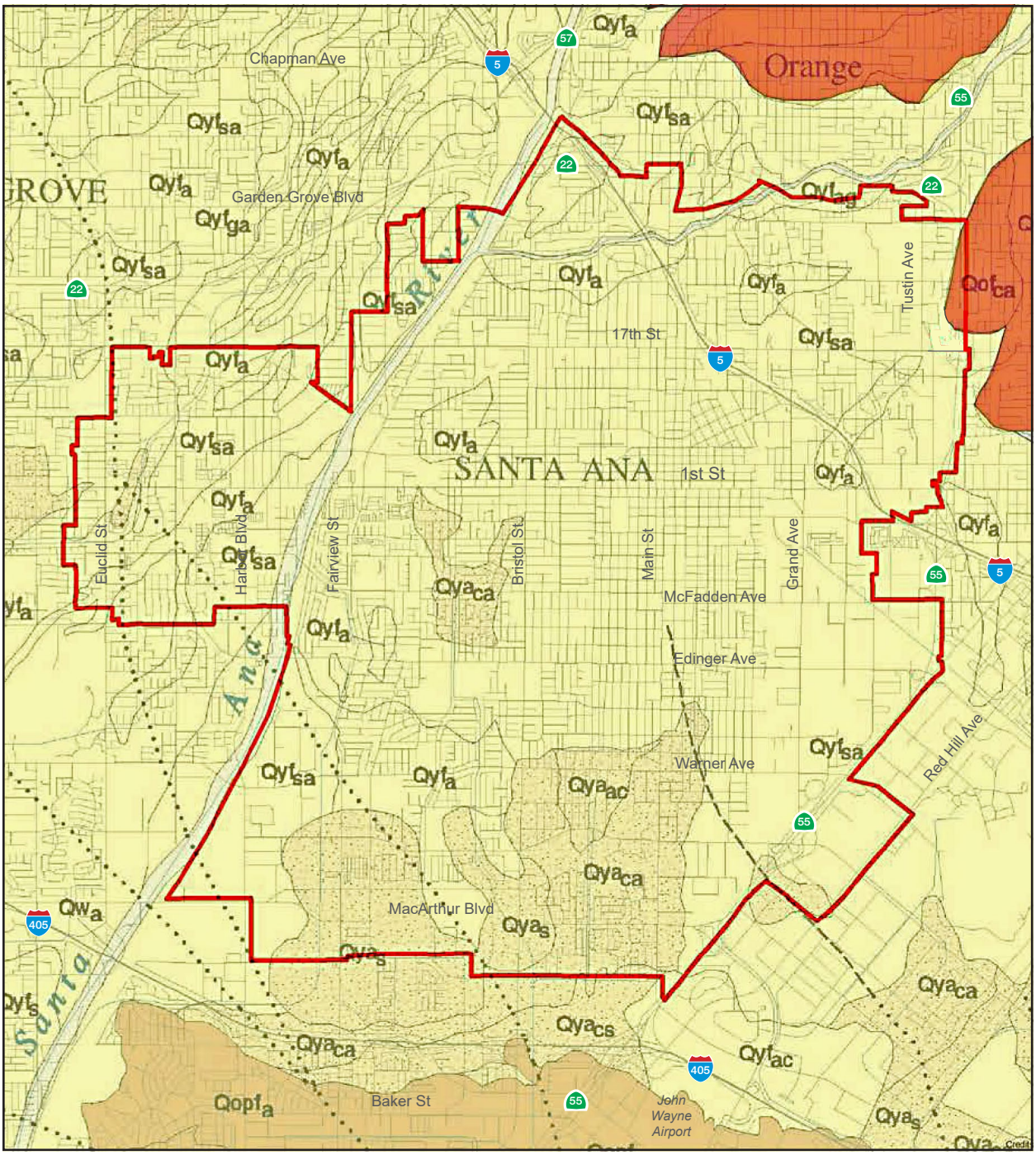
The paleontological existing conditions report for the proposed project assigned paleontological sensitivity rankings to each geologic unit in Santa Ana (see Table 5.6-3 and Figure 5.6-3).

Table 5.6-3 Paleontological Sensitivity of Geologic Units in Santa Ana

Geologic Unit	Age	Occurrence	Sensitivity
Young alluvial fan deposits	Holocene – late Pleistocene	Surface, majority of city	Low-to-High, increasing with depth
Young axial- channel deposits	Holocene – late Pleistocene	Surface, southern part of city	Low-to-High, increasing with depth
Old alluvial fan deposits	Late – middle Pleistocene	Surface, northeastern-most city; Subsurface, throughout city	High

Source: SWCA 2019.

Figure 5.6-3 - Paleontological Sensitivity



City of Santa Ana

Paleo Sensitivity

High Sensitivity

Low-to-High Sensitivity, Increasing with Depth

0 1
Scale (Miles)

Source: SWCA, 2019

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5.6.2 Thresholds of Significance

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

G-1 Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. (Refer to Division of Mines and Geology Special Publication 42.)

ii) Strong seismic ground shaking.

iii) Seismic-related ground failure, including liquefaction.

iv) Landslides.

G-2 Result in substantial soil erosion or the loss of topsoil.

G-3 Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

G-4 Be located on expansive soil, as defined in Table 18-1B of the Uniform building Code (1994), creating substantial direct or indirect risks to life or property.

G-5 Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

G-6 Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

5.6.3 Regulatory Requirements and General Plan Policies

5.6.3.1 REGULATORY REQUIREMENTS

RR G-1 Every public agency enforcing building regulations must adopt the provisions of the California Building Code (CBC), which is Title 24, Part 2 of the California Code of Regulations. The most recent version is the 2019 CBC (effective January 1, 2020). The CBC is updated every three years and provides minimum standards to protect property and public safety by regulating the design and construction of excavations, foundations, building frames, retaining walls, and other building elements to mitigate the effects of seismic shaking and adverse soil conditions. The CBC also contains provisions for earthquake safety based on factors including occupancy type, the types of soil and rock on-site, and the strength of ground shaking with specified probability of occurring at a site.

RR G-2 Santa Ana Municipal Code, Chapter 8, Buildings and Structures. These codes address grading standards, excavation, and fills. This also includes compliance with regulations for unreinforced masonry structures in accordance with "Unreinforced Masonry Law," found in California Government Code §§ 8875 et seq. The City of Santa Ana Building Official may place additional requirements upon the construction of infrastructure, buildings, and other improvements based on the findings from plan check, soils testing, and geotechnical investigations.

RR G-3 Santa Ana Municipal Code Section 39-51 requires that all buildings or structures within the city that require plumbing fixtures must be connected to a public sewer.

5.6.3.2 GENERAL PLAN UPDATE POLICIES

The following are relevant policies of the Santa Ana General Plan Update, which may contribute to reducing potential geology and soils impacts.

Conservation Element

- **Policy 2.1 Native Wildlife Habitat Protection.** Protect and enhance natural vegetation in parks and open spaces for wildlife habitat, erosion control, and to serve as noise and scenic buffers.
- **Policy 2.3 Resource Management.** Efficiently manage soil and mineral resource operations to eliminate significant nuisances, hazards, or adverse environmental effects on neighboring land uses.
- **Policy 3.2 Education Programs.** Support education programs to provide information on energy conservation and alternatives to non-renewable energy sources.
- **Policy 4.1 Water Use.** Encourage and educate residents, business owners, and operators of public facilities to use water wisely and efficiently.
- **Policy 4.2 Landscaping.** Encourage public and private property owners to plant native or drought-tolerant vegetation.
- **Policy 4.3 Recycled Water Systems.** Continue to coordinate with the Orange County Water District, Orange County Sanitation District, and developers for opportunities to expand use of reclaimed water systems.
- **Policy 4.4 Irrigation Systems.** Promote irrigation and rainwater capture systems that conserve water to support a sustainable community.
- **Policy 4.5 Water Supply.** Continue to collaborate with Orange County Water District and Metropolitan Water District to ensure reliable, adequate, and high quality sources of water supply at a reasonable cost.
- **Policy 4.6 Water Quality.** Work with public and private property owners to reduce storm water runoff and to protect the water quality percolating into the aquifer and into any established waterway.

Land Use Element

- **Policy 4.3 Sustainable Land Use Strategies.** Encourage land uses and strategies that reduce energy and water consumption, waste and noise generation, air quality impacts, and light pollution.
- **Policy 4.4 Natural Resource Capture.** Encourage the use of natural processes to capture rainwater runoff, sustainable electric power, and passive climate control.

Open Space Element

- **Policy 1.6 Sustainable Landscape.** Promote citywide use of drought tolerant landscape and development practices for wise water use and energy consumption.

Public Services Element

- **Policy 2.2 Code Compliance.** Require all development to comply with the provisions of the most recently adopted fire and building codes and maintain an ongoing fire inspection program to reduce fire hazards.
- **Policy 3.4 Drainage Facilities.** Expand and maintain storm drain facilities to accommodate the needs of existing and planned development.
- **Policy 3.2 Wastewater Service.** Provide and maintain wastewater collection facilities which adequately serve existing land uses and future development projects while maximizing cost efficiency.
- **Policy 3.7 Emergency Connections.** Maintain emergency connections with local and regional water suppliers in the event of delivery disruption.
- **Policy 3.8 Conservation Strategies.** Implement cost effective conservation strategies and programs that increase water use efficiency.
- **Policy 3.12 Sewer and Water.** Maintain and upgrade sewer and water infrastructure through impact fees from new development and exploring other funding sources.

Safety Element

- **Policy 1.6 Alternative Flood Control Methods.** Explore and encourage natural flood control infrastructure and techniques that create new open areas to capture storm water, recharge aquifers, prevent flooding, and that expand recreation opportunities.
- **Policy 1.7 Surface Water Infiltration.** Encourage site drainage features that reduce impermeable surface area, increase surface water infiltration, and minimize surface water runoff during storm events on private and public developments.
- **Policy 3.1 Hazard Identification.** Explore opportunities to identify and encourage the upgrade of structures and facilities that are at risk from seismic hazards.

- **Policy 3.2 Seismic and Geotechnical Standards.** Ensure that all new development abides by the current city and state seismic and geotechnical requirements and that projects located in areas with potential for geologic or seismic hazards prepare a hazards study.
- **Policy 3.3 Key Public Facilities and Systems.** Coordinate with relevant utility service providers to ensure that major utility systems remains resilient in the event of a major earthquake and are seismically upgraded.
- **Policy 3.4 Multiagency Education Campaign.** Develop cooperative partnerships and strengthen communication among public agencies, residents, nonprofit organizations, and businesses to promote sharing of educational information regarding seismic and geologic hazards and safety.

5.6.4 Environmental Impacts

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

Impact 5.6-1: Plan area residents or occupants, visitors, etc. would be subject to potential seismic-related hazards. [Threshold G-1i, G-1ii, G-1iii and G-1iv])

The plan area's location and underlying geology make it likely to experience seismic hazards, including strong seismic ground shaking, and secondary hazards, like liquefaction.

Earthquake Faults

As stated in Section 5.6.1.2, no active surface faults are mapped and zoned under the AP Zoning Act in the plan area. Therefore, it would not experience surface rupture in the event of an earthquake.

Strong Seismic Ground Shaking

Ground shaking is responsible for most of the damage from earthquakes and can damage or destroy buildings, structures, pipelines, and infrastructure. The intensity of shaking depends on the type of fault, distance to the epicenter, magnitude of the earthquake, and subsurface geology. The Newport-Inglewood Fault southwest of the city is potentially capable of producing the most intense ground accelerations. The seismic design of buildings within the plan area is governed by the requirements of the most recent CBC. The CBC has been accepted as the basic design standard in Santa Ana. All structures that would be constructed in accordance with the General Plan Update would be designed to meet or exceed current design standards as found in the latest CBC. Therefore, new structures are expected to remain standing, but may suffer damage requiring closure and replacement. These project design measures would reduce the exposure of people and structures to harm from strong ground shaking hazards such that there would not be a significant impact.

Seismic-Related Ground Failure

Secondary effects of earthquakes are nontectonic processes such as ground deformation, including fissures, settlement, displacement, and loss of bearing strength, and are the leading causes of damage to structures

during a moderate to large earthquake. Secondary effects could lead to ground deformation including liquefaction, lateral spreading, seismically induced landslides, and ground lurching.

As shown in Figure 5.6-2, most of the plan area is within an area susceptible to liquefaction. All structures constructed following the General Plan Update would be designed in accordance with current seismic design standards as found in the CBC. Design measures would be implemented according to the most recent CBC, which would reduce the impact of liquefaction and seismic settlement, including, but not limited to, ground improvement techniques such as in-situ densification, load transfer to underlying nonliquefiable bearing layers, and over-excavation and recompaction with engineered fill method. These design measures would reduce the potential exposure of people and structures to the hazard from liquefaction and seismic settlement such that there would not be a significant impact.

Landslides

Marginally stable slopes (including existing landslides) may be subject to landslides caused by earthquakes. The landslide hazard depends on many factors, including existing slope stability, shaking potential, and presence of existing landslides. Landslides, debris flows, or any movement of earth or rock are most common in areas of high topographic relief, such as steep canyon walls or steep hillsides. There are no substantial hazards with respect to slope stability, as the plan area is mostly flat. There would not be a significant impact from slope stability.

Level of Significance Before Mitigation: With the implementation of RR G-1, Public Services Policies 2.2 and 3.7, and Safety Policies 3.1 through 3.4, Impact 5.6-1 will be less than significant.

Impact 5.6-2: Unstable geologic unit or soils conditions, including soil erosion, could result from development of the General Plan Update. [Thresholds G-2, G-3 and G-4]

Proposed General Plan Update buildout would involve soil disturbance, construction, and operation of developed land uses that could each be subject to unstable soils conditions.

Soil Erosion

Soils are particularly prone to erosion during the grading phase of development, especially during heavy rains. The use of a Storm Water Pollution Prevention Plan (SWPPP), which specifies best management practices for temporary erosion controls, reduces the potential for erosion during construction period activities. Standard erosion control measures would be implemented as part of a SWPPP for proposed projects within the plan area to minimize the risk of erosion or sedimentation during construction. The SWPPP must include an erosion control plan that prescribes measures such as phasing grading, limiting areas of disturbance, designating restricted-entry zones, diverting runoff from disturbed areas, protective measures for sensitive areas, outlet protection, and provisions for revegetation or mulching.

Mandatory compliance with existing regulations, including the preparation and submittal of a SWPPP and a soil engineering evaluation, would reduce impacts to a less than significant level. A comprehensive discussion of erosion and water quality from rain events can be found in Section 5.9, *Hydrology and Water Quality*.

Expansive Soils

Based on the presence of alluvial materials in the plan area, there is some potential for expansive soils throughout Santa Ana (Morton 2004; USDA 1978). Expansive soils are possible wherever clays and elastic silts may be present, including alluvial soils and weathered granitic and fine-grained sedimentary rocks. The presence of expansive soils represents a hazard to structures and people.

CBC design code has been adopted by the City and requires that structures be designed to mitigate expansive soils. Methods that could be used to reduce the impact of expansive soils include drainage control devices to limit water infiltration near foundations, over-excavation and recompaction of engineered fill method, or support of the foundation with piles. These project design measures, or a combination of them, will reduce the impact of expansive soils to less than significant.

Settlement and Collapse

Settlement and collapse are likely to exist in areas with alluvial soils. Areas of large settlement can damage, or in extreme cases, destroy structures. The presence of compressible soils in the city represents a hazard to structures and people.

CBC design code has been adopted by the City and requires that structures be designed to mitigate compressible soils. Methods that could be used to reduce the impact of compressible soils include in-situ densification, transferring the load to underlying non-compressible layers with piles, and overexcavation of compressible soil and recompaction with engineered fill. These design measures, or a combination of them, would reduce the impact of compressible soils to less than significant.

Subsidence

Subsidence has been historically documented in Santa Ana and is considered a potential hazard (Riel et al. 2018). Historically, subsidence in Santa Ana does not show a pattern of widespread irreversible permanent lowering of the ground surface. The probability of subsidence impacts is generally low in the majority of Santa Ana, with the most susceptible areas along the margins of the Santa Ana River and Santiago Creek. Groundwater storage by Orange County Water District and statutory commitments to sustainable groundwater management practices reduce the potential for future land subsidence, and ongoing surveying of the ground surface by Orange County Water District provides a way to verify that its efforts in preventing subsidence are effective. The statutorily required sustainable groundwater management practices of the Orange County Water District reduce the impact of subsidence to less than significant.

Level of Significance Before Mitigation: With the implementation of RR G-1 and RR G-2; Conservation Policies 2.1, 2.3, and 4.1 through 4.6; Land Use Policies 4.3 and 4.4; Open Space Policy 1.6; Public Services Policies 2.2, 3.4, and 3.8; and Safety Policies 1.6 and 1.7, Impact 5.6-2 will be less than significant.

Impact 5.6-3: Future development in the plan area would require connection to the City's sewer system. [Threshold G-5]

The City of Santa Ana has implemented RR G-3, which does not allow for the installation of septic tanks.

Level of Significance Before Mitigation: With the implementation of RR G-3 and Public Services Policies 3.2 and 3.12, Impact 5.6-3 will be less than significant.

Impact 5.6-4: Future development that would be accommodated by the General Plan Update could impact known and unknown paleontological resources. [Threshold G-6]

Paleontological resources are recognized as nonrenewable and therefore receive protection under the California Public Resources Code and CEQA. Adoption of the General Plan Update in itself will not directly affect paleontological resources. Long-term implementation of the General Plan Update land use plan could allow development (e.g., infill development, redevelopment, and revitalization/restoration), including grading, of known and unknown sensitive areas. Grading and construction activities of undeveloped areas or redevelopment that requires more intensive soil excavation than in the past could potentially disturb paleontological resources. Therefore, future development that would be accommodated by the General Plan Update could potentially unearth previously unrecorded resources. Review and protection of paleontological resources are also afforded by CEQA for individual development projects that would be accommodated by the General Plan Update, subject to discretionary actions that are implemented in accordance with the land use plan of the General Plan Update.

As shown in Section 5.6.1.2, fossil localities have been found in the vicinity of the plan area, although not in the plan area itself. Table 5.6-3 and Figure 5.6-3 show the paleontological sensitivity of the geological units within the plan area.

Level of Significance Before Mitigation: Impact 5.6-4 would be potentially significant before mitigation.

5.6.5 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, some impacts would be less than significant: 5.6-1, 5.6-2, and 5.6-3.

Without mitigation, this impact would be **potentially significant**:

- **Impact 5.6-4** Paleontological resources could be impacted by development resulting from the implementation of the General Plan Update.

5.6.6 Mitigation Measures

Impact 5.6-4

Paleontological Resources

GEO-1 **High Sensitivity.** Projects involving ground disturbances in previously undisturbed areas mapped as having "high" paleontological sensitivity shall be monitored by a qualified paleontological monitor on a full-time basis. Monitoring shall include inspection of exposed sedimentary units during active excavations within sensitive geologic sediments. The monitor shall have authority to temporarily divert activity away from exposed fossils to evaluate the

significance of the find and, if the fossils are determined to be significant, professionally and efficiently recover the fossil specimens and collect associated data. The paleontological monitor shall use field data forms to record pertinent location and geologic data, measure stratigraphic sections (if applicable), and collect appropriate sediment samples from any fossil localities.

GEO-2 **Low-to-High Sensitivity**. Prior to issuance of a grading permit for projects involving ground disturbance in previously undisturbed areas mapped with "low-to-high" paleontological sensitivity (see Figure 5.6-3), the project applicant shall consult with a geologist or paleontologist to confirm whether the grading would occur at depths that could encounter highly sensitive sediments for paleontological resources. If confirmed that underlying sediments may have high sensitivity, construction activity shall be monitored by a qualified paleontologist. The paleontologist shall have the authority to halt construction during construction activity as outlined in Mitigation Measure GEO-3.

GEO-3 **All Projects**. In the event of any fossil discovery, regardless of depth or geologic formation, construction work shall halt within a 50-foot radius of the find until its significance can be determined by a qualified paleontologist. Significant fossils shall be recovered, prepared to the point of curation, identified by qualified experts, listed in a database to facilitate analysis, and deposited in a designated paleontological curation facility in accordance with the standards of the Society of Vertebrate Paleontology (2010). The most likely repository is the Natural History Museum of Los Angeles County. The repository shall be identified and a curatorial arrangement shall be signed prior to collection of the fossils.

5.6.7 Level of Significance After Mitigation

Impact 5.6-4

Mitigation Measures GEO-1 through GEO-3 prescribe requirements for monitoring based on the sensitivity of sites for paleontological resources. Under GEO-1, areas that range from high to low sensitivity are required to prepare a Paleontological Resources Monitoring and Mitigation Plan. With adherence to mitigation measures GEO-1 through GEO-3, Impact 5.6-4 would be less than significant.

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5.7 GREENHOUSE GAS EMISSIONS

This section of the Draft Program Environmental Impact Report (PEIR) evaluates the potential for implementation of the updated General Plan to cumulatively contribute to greenhouse gas (GHG) emissions impacts. Because no single plan is large enough to result in a measurable increase in global concentrations of GHG, climate change impacts are considered on a cumulative basis.

This evaluation is based on the methodology recommended by the South Coast Air Quality Management District (South Coast AQMD). GHG emissions modeling was conducted using the California Emissions Estimator Model (CalEEMod), version 2016.3.2, and model outputs are in Volume II, Appendix C of this PEIR.

Terminology

The following are definitions for terms used throughout this section.

- **Greenhouse gases (GHG).** Gases in the atmosphere that absorb infrared light, thereby retaining heat in the atmosphere and contributing to a greenhouse effect.
- **Global warming potential (GWP).** Metric used to describe how much heat a molecule of a greenhouse gas absorbs relative to a molecule of carbon dioxide (CO_2) over a given period of time (20, 100, and 500 years). CO_2 has a GWP of 1.
- **Carbon dioxide-equivalent (CO_2e).** The standard unit to measure the amount of greenhouse gases in terms of the amount of CO_2 that would cause the same amount of warming. CO_2e is based on the GWP ratios between the various GHGs relative to CO_2.
- **$MTCO_2e$.** Metric ton of CO_2e.
- **$MMTCO_2e$.** Million metric tons of CO_2e.

5.7.1 Environmental Setting

5.7.1.1 GREENHOUSE GASES AND CLIMATE CHANGE

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHGs, to the atmosphere. The "greenhouse effect" is the natural process that retains heat in the troposphere, which is the bottom layer of the atmosphere. Without the greenhouse effect, thermal energy would escape into space, resulting in a much colder and inhospitable planet. GHGs are the components of the atmosphere responsible for the greenhouse effect. The amount of heat that is retained is proportional to the concentration of GHGs in the atmosphere. As more GHGs are released into the atmosphere, GHG concentrations increase and the atmosphere retains more heat, increasing the effects of climate change.

The primary source of these GHGs is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHGs—water vapor, carbon dioxide (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed in the 20th and 21st centuries. Other GHGs identified by the IPCC that contribute to global warming to a lesser extent are nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons (IPCC 2001).[1,2] The major GHGs applicable to the General Plan update are briefly described.

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

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

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

GHGs are dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Some GHGs have a stronger greenhouse effect than others. These are referred to as high GWP gases. The GWP of GHG emissions are shown in Table 5.7-1. The GWP is used to convert GHGs to CO_2-equivalence (CO_2e) to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's Fourth Assessment Report (AR4) GWP values for CH_4, 10 MT of CH_4 would be equivalent to 250 MT of CO_2.

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

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

Table 5.7-1 GHG Emissions and Their Relative Global Warming Potential Compared to CO_2

GHGs	Second Assessment Report Atmospheric Lifetime (Years)	Fourth Assessment Report Atmospheric Lifetime (Years)	Second Assessment Report Global Warming Potential Relative to CO_2[1]	Fourth Assessment Report Global Warming Potential Relative to CO_2[1]
Carbon Dioxide (CO_2)	50 to 200	50 to 200	1	1
Methane[2] (CH_4)	12 (±3)	12	21	25
Nitrous Oxide (N_2O)	120	114	310	298

Source: IPCC 1995, 2007.

Notes: The IPCC published updated GWP values in its Fifth Assessment Report (2013) that reflect new information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO_2. However, GWP values identified in AR4 are used to maintain consistency in statewide GHG emissions modeling. In addition, the 2014 Scoping Plan update was based on the GWP values in AR4.

1 Based on 100-year time horizon of the GWP of the air pollutant compared to CO_2.

2 The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.

California's GHG Sources and Relative Contribution

In 2019, the statewide GHG emissions inventory was updated for 2000 to 2017 emissions using the GWPs in IPCC's AR4.[3] Based on these GWPs, California produced 424.10 $MMTCO_2e$ GHG emissions in 2017. The California Air Resources Board (CARB) categorizes GHG generation into the following seven sectors (CARB 2019b).

- **Transportation.** Consists of direct tailpipe emissions from on-road vehicle and direct emissions from off-road transportation mobile sources, intrastate aviation, rail, and watercraft. Emissions are generated from the combustion of fuels in on- and off-road vehicles in addition to aviation, rail, and ships.

- **Electric.** Includes emissions from in-state power generation (including the portion of cogeneration emissions attributed to electricity generation) and emissions from imported electricity.

- **Industrial.** Includes emissions primarily driven by fuel combustion from sources that include refineries, oil and gas extraction, cement plants, and the portion of cogeneration emissions attribute to thermal energy output.

- **Commercial and Residential.** Accounts for emissions generated from combustion of natural gas and other fuels for household and commercial business use, such as space heating, cooking, and hot water or steam generation. Emissions associated with electricity usage are accounted for in the Electric Sector.

- **Recycling and Waste.** Consists of emissions generated at landfills and from commercial-scale composting.

- **Agriculture.** Primarily includes methane (CH_4) and nitrous oxide (N_2O) emissions generated from enteric fermentation and manure management from livestock. Also accounts for emissions associated with crop

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

production (fertilizer use, soil preparation and disturbance, and crop residue burning) and fuel combustion associated with stationary agricultural activities (e.g., water pumping, cooling or heating buildings).

- **High Global Warming Potential Gases.** Associated with substitutes for ozone-depleting substances, emissions from electricity transmission and distribution system, and gases emitted in the semiconductor manufacturing process. Substitutes for ozone-depleting substances are used in refrigeration and air conditioning equipment, solvent cleaning, foam production, fire retardants, and aerosols.

California's transportation sector was the single largest generator of GHG emissions, producing 40.1 percent of the state's total emissions. Industrial sector emissions made up 21.1 percent, and electric power generation made up 14.7 percent of the state's emissions inventory. Other major sectors of GHG emissions include commercial and residential (9.7 percent), agriculture and forestry (7.6 percent), high GWP (4.7 percent), and recycling and waste (2.1 percent) t (CARB 2019a).

California's GHG emissions have followed a declining trend since 2007. In 2017, emissions from routine GHG-emitting activities statewide were 424 $MMTCO_2e$, 5 $MMTCO_2e$ lower than 2016 levels. This represents an overall decrease of 14 percent since peak levels in 2004 and 7 $MMTCO_2e$ below the 1990 level and the state's 2020 GHG target. During the 2000 to 2017 period, per capita GHG emissions in California continued to drop from a peak in 2001 of 14.0 $MTCO_2e$ per capita to 10.7 $MTCO_2e$ per capita in 2017, a 24 percent decrease. Overall trends in the inventory also demonstrate that the carbon intensity of California's economy (the amount of carbon pollution per million dollars of gross domestic product) has declined 41 percent since the 2001 peak, while the state's gross domestic product has grown 52 percent during the same period. For the first time since California started to track GHG emissions, California uses more electricity from zero-GHG sources (hydro, solar, wind, and nuclear energy) (CARB 2019b).

Human Influence on Climate Change

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

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth's temperature are hard to predict. Projections of climate change depend heavily upon future human activity. Therefore, climate models are based on different emission scenarios that account for historical trends in emissions and on observations of the climate record that assess the human

influence of the trend and projections for extreme weather events. Climate-change scenarios are affected by varying degrees of uncertainty. For example, there are varying degrees of certainty on the magnitude of the trends for:

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

Potential Climate Change Impacts for California

Observed changes over the last several decades across the western United States reveal clear signs of climate change. Statewide, average temperatures increased by about 1.7°F from 1895 to 2011, and warming has been greatest in the Sierra Nevada (CCCC 2012). The years from 2014 through 2016 have shown unprecedented warm temperatures, with 2014 being the warmest (OEHHA 2018). By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase by 4.1 to 8.6°F, depending on emissions levels (CCCC 2012).

In California and western North America, observations of the climate have shown: 1) a trend toward warmer winter and spring temperatures; 2) a smaller fraction of precipitation falling as snow; 3) a decrease in the amount of spring snow accumulation in the lower and middle elevation mountain zones; 4) advanced shift in the timing of snowmelt of 5 to 30 days earlier in the spring; and 5) a similar shift (5 to 30 days earlier) in the timing of spring flower blooms (CAT 2006). Overall, California has become drier over time, with five of the eight years of severe to extreme drought occurring between 2007 and 2016, with unprecedented dry years occurring in 2014 and 2015 (OEHHA 2018). Statewide precipitation has become increasingly variable from year to year, with the driest consecutive four years occurring from 2012 to 2015 (OEHHA 2018). According to the California Climate Action Team—a committee of state agency secretaries and the heads of agencies, boards, and departments, led by the Secretary of the California Environmental Protection Agency—even if actions could be taken to immediately curtail climate change emissions, the potency of emissions that have already built up, their long atmospheric lifetimes (see Table 5.7-1), and the inertia of the Earth's climate system could produce as much as 0.6°C (1.1°F) of additional warming. Consequently, some impacts from climate change are now considered unavoidable. Global climate change risks to California are shown in Table 5.7-2 and include impacts to public health, water resources, agriculture, coastal sea level, forest and biological resources, and energy.

Table 5.7-2 Summary of GHG Emissions Risks to California

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

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

5.7.2 Regulatory Background

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

Federal

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

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

US Mandatory Reporting Rule for GHGs (2009)

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 $MTCO_2e$ or more per year are required to submit an annual report.

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

The federal government issued new Corporate Average Fuel Economy (CAFE) standards in 2012 for model years 2017 to 2025, which required a fleet average of 54.5 miles per gallon in 2025. However, on March 30, 2020, the EPA finalized updated CAFE and GHG emissions standards for passenger cars and light trucks and established new standards, covering model years 2021 through 2026, known as the Safer Affordable Fuel Efficient (SAFE) Vehicles Final Rule for Model Years 2021-2026. However, a consortium of automakers and the State of California have agreed on a voluntary framework to reduce emissions that can serve as an alternative path forward for clean vehicle standards nationwide. Automakers who agreed to the framework are Ford, Honda, BMW of North America, and Volkswagen Group of America. The framework supports continued annual reductions of vehicle greenhouse gas emissions through the 2026 model year, encourages innovation to accelerate the transition to electric vehicles, and gives industry the certainty needed to make investments and create jobs. This commitment means that the auto companies party to the voluntary agreement will only sell cars in the United States that meet these standards (CARB 2019d).

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

Pursuant to its authority under the Clean Air Act, the EPA has been developing regulations for new, large stationary sources of emissions such as power plants and refineries. Under former President Obama's 2013 Climate Action Plan, the EPA was directed to develop regulations for existing stationary sources as well. On June 19, 2019, the EPA issued the final Affordable Clean Energy (ACE) rule which became effective on August 19,2019. The ACE rule was crafted under the direction of President Trump's Energy Independence Executive Order. It officially rescinds the Clean Power Plan rule issued during the Obama Administration and sets emissions guidelines for states in developing plans to limit CO_2 emissions from coal-fired power plants.

State

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

Executive Order S-03-05

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

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

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

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

CARB 2008 Scoping Plan

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

First Update to the Scoping Plan

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

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

Executive Order B-30-15

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

Senate Bill 32 and Assembly Bill 197

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

2017 Climate Change Scoping Plan

Executive Order B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. On December 24, 2017, CARB approved the 2017 Climate Change Scoping Plan Update, which outlines potential regulations and programs, including strategies consistent with AB 197 requirements, to achieve the 2030 target. The 2017 Scoping Plan establishes a new emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030 (CARB 2017b).

California's climate strategy will require contributions from all sectors of the economy, including enhanced focus on zero- and near-zero emission vehicle technologies; continued investment in renewables such as solar roofs, wind, and other types of distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (methane, black carbon, and fluorinated gases); and an increased focus on integrated land use planning to support livable, transit-connected communities and conserve agricultural and other lands. Requirements for GHG reductions at stationary sources complement local air pollution control efforts by the local air districts to tighten emissions limits for criteria air pollutants and toxic air contaminants on a broad spectrum of industrial sources. Major elements of the 2017 Scoping Plan framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing zero-emission (ZE) buses and trucks.
- Low Carbon Fuel Standard (LCFS), with an increased stringency (18 percent by 2030).
- Implementation of SB 350, which expands the Renewables Portfolio Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency by 25 percent by 2030 and utilizes near-zero emissions technology and deployment of ZE trucks.

- Implementing the proposed Short-Lived Climate Pollutant Strategy, which focuses on reducing methane and hydrofluorocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- Continued implementation of SB 375.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

In addition to these statewide strategies, the 2017 Climate Change Scoping Plan also identified local governments as essential partners in achieving the state's long-term GHG reduction goals and recommended local actions to reduce GHG emissions—for example, statewide targets of no more than 6 $MTCO_2e$ or less per capita by 2030 and 2 $MTCO_2e$ or less per capita by 2050. CARB recommends that local governments evaluate and adopt quantitative, locally appropriate goals that align with the statewide per capita targets and sustainable development objectives, and develop plans to achieve the local goals. The statewide per capita goals were developed by applying the percent reductions necessary to reach the 2030 and 2050 climate goals (i.e., 40 percent and 80 percent, respectively) to the state's 1990 emissions limit established under AB 32. For CEQA projects, CARB states that lead agencies have discretion to develop evidenced-based numeric thresholds (mass emissions, per capita, or per service population) consistent with the Scoping Plan and the state's long-term GHG goals. To the degree a project relies on GHG mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions, especially from vehicle miles traveled (VMT), and direct investments in GHG reductions within the project's region that contribute potential air quality, health, and economic co-benefits. Where further project design or regional investments are infeasible or not proven to be effective, CARB recommends mitigating potential GHG impacts through purchasing and retiring carbon credits.

The Scoping Plan scenario is set against what is called the "business as usual" yardstick—that is, what would the GHG emissions look like if the state did nothing at all beyond the policies that are already required and in place to achieve the 2020 limit, as shown in Table 5.7-3. It includes the existing renewables requirements, advanced clean cars, the "10 percent" LCFS, and the SB 375 program for more vibrant communities, among others. However, it does not include a range of new policies or measures that have been developed or put into statute over the past two years. Also shown in the table, the known commitments are expected to result in emissions that are 60 $MMTCO_2e$ above the target in 2030. If the estimated GHG reductions from the known commitments are not realized due to delays in implementation or technology deployment, the post-2020 Cap-and-Trade Program would deliver the additional GHG reductions in the sectors it covers to ensure the 2030 target is achieved.

Table 5.7-3 2017 Climate Change Scoping Plan Emissions Reductions Gap

Modeling Scenario	2030 GHG Emissions $MMTCO_2e$
Reference Scenario (Business-as-Usual)	389
With Known Commitments	320
2030 GHG Target	**260**
Gap to 2030 Target	**60**

Source: CARB 2017b.

Table 5.7-4 provides estimated GHG emissions compared to 1990 levels, and the range of GHG emissions for each sector estimated for 2030.

Table 5.7-4 2017 Climate Change Scoping Plan Emissions Change by Sector

Scoping Plan Sector	1990 $MMTCO_2e$	2030 Proposed Plan Ranges $MMTCO_2e$	% Change from 1990
Agricultural	26	24 to 25	-8% to -4%
Residential and Commercial	44	38 to 40	-14% to -9%
Electric Power	108	30 to 53	-72% to -51%
High GWP	3	8 to 11	267% to 367%
Industrial	98	83 to 90	-15% to -8%
Recycling and Waste	7	8 to 9	14% to 29%
Transportation (including TCU)	152	103 to 111	-32% to -27%
Net Sink[1]	-7	TBD	TBD
Sub Total	**431**	**294 to 339**	**-32% to -21%**
Cap-and-Trade Program	NA	34 to 79	NA
Total	**431**	**260**	**-40%**

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

Senate Bill 375

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

Pursuant to the recommendations of the Regional Transportation Advisory Committee, CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target. SCAG's targets are an 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035 (CARB 2010). The 2020 targets are smaller than the 2035 targets because a significant portion of the built environment in 2020 has been defined by decisions that have already been made. In general, the 2020 scenarios reflect that more time is needed for large land use and transportation infrastructure changes. Most of the reductions in the interim are anticipated to come from improving the efficiency of the region's transportation network. The targets would result in 3 $MMTCO_2e$ of reductions by 2020 and 15 $MMTCO_2e$ of reductions by 2035. Based on these reductions, the passenger vehicle target in CARB's Scoping Plan (for AB 32) would be met (CARB 2010).

2017 Update to the SB 375 Targets

CARB is required to update the targets for the MPOs every eight years. In June 2017, CARB released updated targets and technical methodology, and released another update in February 2018. The updated targets consider the need to further reduce VMT, as identified in the 2017 Scoping Plan update, while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks relative to 2005. This excludes reductions anticipated from implementation of state technology and fuels strategies and any potential future state strategies such as statewide road user pricing. The proposed targets call for greater per capita GHG emission reductions from SB 375 than are currently in place, which for 2035, translate into proposed targets that either match or exceed the emission reduction levels in the MPOs' currently adopted sustainable communities strategies (SCS). As proposed, CARB staff's proposed targets would result in an additional reduction of over 8 $MMTCO_2e$ in 2035 compared to the current targets. For the next round of SCS updates, CARB's updated targets for the SCAG region are an 8 percent per capita GHG reduction in 2020 from 2005 levels (unchanged from the 2010 target) and a 19 percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 13 percent) (CARB 2018). CARB adopted the updated targets and methodology on March 22, 2018. All SCSs adopted after October 1, 2018, are subject to these new targets.

SCAG's Regional Transportation Plan / Sustainable Communities Strategy

SB 375 requires each MPO to prepare a sustainable communities strategy in its regional transportation plan. For the SCAG region, the 2016-2040 Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS) was adopted on April 7, 2016, and is an update to the 2012 RTP/SCS (SCAG 2016). SCAG released the draft 2020-2045 RTP/SCS (Connect SoCal); adopted the plan for the limited purpose of transportation conformity on May 7, 2020; and will consider the plan in 120 days (SCAG 2020). In general, the SCS outlines a development pattern for the region that, when integrated with the transportation network and other transportation measures and policies, would reduce vehicle miles traveled from automobiles and light duty trucks and thereby reduce GHG emissions from these sources.

Connect SoCal focuses on the continued efforts of the previous RTP/SCSs to integrate transportation and land uses strategies in development of the SCAG region through horizon year 2045 (SCAG 2020). Connect SoCal forecasts that the SCAG region will meet its GHG per capita reduction targets of 8 percent by 2020 and

19 percent by 2035. Additionally, Connect SoCal forecasts that implementation of the plan will reduce VMT per capita in year 2045 by 4.1 percent compared to baseline conditions for that year. Connect SoCal includes a "Core Vision" that centers on maintaining and better managing the transportation network for moving people and goods while expanding mobility choices by locating housing, jobs, and transit closer together, and increasing investments in transit and complete streets (SCAG 2020).

Transportation Sector Regulations

Assembly Bill 1493

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

Executive Order S-01-07

On January 18, 2007, the state set a new LCFS for transportation fuels sold in the state. Executive Order S-01-07 sets a declining standard for GHG emissions measured in CO_2e gram per unit of fuel energy sold in California. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The standard applies to refiners, blenders, producers, and importers of transportation fuels, and would use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle" using the most economically feasible methods.

Executive Order B-16-2012

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

Renewables Portfolio: Carbon Neutrality Regulations

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

A major component of California's Renewable Energy Program is the renewables portfolio standard established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. Executive Order S-14-08, signed in November 2008, expanded the state's renewable energy standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects because electricity production from renewable sources is generally considered carbon neutral.

Senate Bill 350

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

Senate Bill 100

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

Executive Order B-55-18

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

Energy Efficiency Regulations

California Building Code: Building Energy Efficiency Standards

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2019 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of

building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. The 2019 Building Energy Efficiency Standards, which were adopted on May 9, 2018, went into effect starting January 1, 2020.

The 2019 standards move toward cutting energy use in new homes by more than 50 percent and require installation of solar photovoltaic systems for single-family homes and multifamily buildings of three stories and less. The 2019 standards focus on four key areas: 1) smart residential photovoltaic systems; 2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); 3) residential and nonresidential ventilation requirements; 4) and nonresidential lighting requirements (CEC 2018a). Under the 2019 standards, nonresidential buildings are 30 percent more energy efficient compared to the 2016 standards, and single-family homes are 7 percent more energy efficient (CEC 2018b). When accounting for the electricity generated by the solar photovoltaic system, single-family homes would use 53 percent less energy compared to homes built to the 2016 standards (CEC 2018b).

California Building Code: CALGreen

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The mandatory provisions of CALGreen became effective January 1, 2011, and were last updated in 2019. The 2019 CALGreen standards became effective January 1, 2020.

2006 Appliance Efficiency Regulations

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

Solid Waste Diversion Regulations

AB 939: Integrated Waste Management Act of 1989

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

AB 341

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses. Section 5.408 of CALGreen also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

AB 1327

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

AB 1826

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

Water Efficiency Regulations

SBX7-7

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

AB 1881, Water Conservation in Landscaping Act

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

Short-Lived Climate Pollutant Reduction Strategy

Senate Bill 1383

On September 19, 2016, the governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and methane (CH_4). Black carbon is the light-absorbing component of fine particulate matter produced during incomplete combustion of fuels. SB 1383 required the state board, no later than January 1, 2018, to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The bill also established targets for reducing organic waste in landfills. On March 14, 2017, CARB adopted the Short-Lived Climate Pollutant Reduction Strategy, which identifies the state's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s, despite the tripling of diesel fuel use (CARB 2017a). In-use, on-road rules are expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020.

Local

City of Santa Ana Climate Action Plan

Adopted in December 2015, the Santa Ana Climate Action Plan (CAP) represents the City's commitment to improving its residents' quality of life by reducing carbon pollution and energy use. The CAP elaborates on the goals and policies detailed in the current General Plan, including those mentioned in the General Plan's energy element. In addition, the CAP identifies a number of measures to reduce emissions from five sectors: transportation and land use, energy, solid waste, water, and wastewater. These measures for community-wide reductions are projected to reach the CAP 15 percent reduction goal by 2020 and nearly reach its 30 percent reduction goal for 2035. Measures affecting municipal operations are projected to meet a 30 percent reduction goal by 2020 and 40 percent by 2035.

- **Transportation and Land Use Measures.** The relevant measures identified for the transportation and land use sector include development of 1) local retail service nodes, 2) local residential nodes near retail and employment, 3) local employment nodes near residential and retail areas, 4) a traffic signal synchronization program, and 5) an alternative-fuel vehicle fleet (CAP 2015).

- **Community-Wide and Municipal Energy Measures.** The relevant measures identified for community-wide and municipal energy include programs and policies such as 1) Southern California Edison small and medium business direct install, 2) solar photovoltaic systems, new private installs, 3) Southern California Edison and Southern California Gas Company residential programs, 4) Southern California Gas Company commercial programs, 5) streetlight purchase and retrofit with LED lighting, and 6) Title 24 energy efficiency standards, commercial and residential.

- **Solid Waste, Water, and Wastewater Measures.**. The relevant measures identified for solid waste, water, and wastewater include the Assembly Bill 341 commercial and multifamily recycling program because it would contribute to the reduction of landfill methane emissions.

The CAP also offers implementation and monitoring strategies to achieve its goals. Implementation strategies include proper staffing; partnerships with Southern California Edison (SCE), SoCalGas, and the Santa Ana Chamber of Commerce; outreach and education for the community; and preparation of a time frame for implementation.

5.7.2.1 EXISTING CONDITIONS

Existing Emissions

The existing land uses in Santa Ana consist of single- and multi-family residences, mixed-use development, retail, office, commercial, industrial, and institutional uses. Operation of these land uses generates GHG emissions from natural gas used for energy, heating, and cooking; electricity usage; vehicle trips for employees and residents; area sources such as landscaping equipment and consumer cleaning products; water demand; waste generation; and solid waste generation.[4] Table 5.7-5 shows the emissions associated with existing land uses in the city.

Table 5.7-5 Existing Santa Ana Greenhouse Gas Emissions Inventory

Sector	Existing (CEQA Baseline) GHG Emissions	
	$MTCO_2e$/year	Percent of Total
Transportation	1,463,006	66%
Energy – Residential[1]	208,050	9%
Energy – Nonresidential[1]	432,202	20%
Solid Waste[2]	56,603	3%
Water/Wastewater[3]	34,084	2%
Other – Off-Road Equipment[4]	18,678	1%
Existing Community-Wide Emissions Total	2,212,622	100%
Adjusted Service Population (SP)[5]	460,686	NA
$MTCO_2e$/Year/SP	4.8	NA

Note: Emissions may not total 100 percent due to rounding. Based on IPCC's AR4 GWPs.

1 Energy use makes use of a seven-year (2012–2018) annual electricity consumption average based on data provided by SCE and a five-year (2014–2018) natural gas consumption average based on data provided by SoCalGas. Emissions from electricity use a CO_2e intensity factor of 513 pounds per megawatt hour based on the SCE CO_2 intensity factor reported for year 2018 (SCE 2019) The CH_4 and N_2O intensity factors are from the latest EPA eGRID data (USEPA 2018). Electricity and natural gas use from industrial and permitted facilities may be included with the overall amounts for nonresidential uses, as the 15/15 Rule was triggered.

2 Sources: Landfill Emissions Tool Version 1.3 and CalRecycle. Waste generation based on three-year average (2016–2018) waste commitment for the City obtained from CalRecycle. Assumes 75 percent of fugitive GHG emissions are captured within the landfill's gas capture system. The landfill gas capture efficiency is based on CARB's Local Government Operations Protocol (LGOP), version 1.1. Significant CH_4 production typically begins one or two years after waste disposal in a landfill and continues for 10 to 60 years or longer. Therefore, the highest CH_4 emissions from waste disposal in a given year are reported.

3 Source: LGOP, version 1.1, based on the water demand provided by the City. Wastewater generation is assumed to be equal to 95 percent of water use.

4 Consists of light commercial and construction equipment. Light commercial equipment emissions based on employment for City of Santa Ana as a percentage of Orange County and on OFFROAD2017 emission rates for year 2019. Construction equipment emissions based on housing permit data for Orange County and City from the US Census and on OFFROAD2017 emission rates for year 2019.

5 Service population (SP) consists of the aggregate of total employees and population within the study area. When aggregating employees and residents for transportation efficiency, an employee reduction factor was applied to account for overlaps in the two (employees who are also residents). Reduction factors were applied to both the City of Santa Ana employees then aggregated to the resident population. Reduction factors are based on employment data within the SCAG Local Profiles Reports (2019) for the City of Santa Ana. The SCAG reports show that 20.8 percent of employees within the City are also residents of the City (IBI 2020). Consists of approximately 334,774 residents and 158,980 employees in Santa Ana.

4 Emissions from water demand and wastewater are emissions associated with electricity used to supply, treat, and distribute water.

5.7.3 Thresholds of Significance

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

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

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

South Coast Air Quality Management District

South Coast AQMD has adopted a significance threshold of 10,000 $MTCO_2e$ per year for permitted (stationary) sources of GHG emissions for which South Coast AQMD is the designated lead agency. To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, South Coast AQMD convened a GHG CEQA Significance Threshold Working Group (Working Group). Based on the last Working Group meeting (Meeting No. 15) in September 2010, South Coast AQMD identified a tiered approach for evaluating GHG emissions for development projects where it is not the lead agency:

- **Tier 1.** If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.
- **Tier 2.** If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e. city or county), project-level and cumulative GHG emissions are less than significant.
- **Tier 3.** If GHG emissions are less than the screening-level threshold, project-level and cumulative GHG emissions are less than significant. For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, South Coast AQMD requires an assessment of GHG emissions. The South Coast AQMD Working Group identified a "bright-line" screening-level threshold of 3,000 $MTCO_2e$ annually for all land-use types. This bright-line threshold is based on a review of the Governor's Office of Planning and Research database of CEQA projects. Based on their review of 711 CEQA projects, 90 percent of CEQA projects would exceed the bright-line thresholds identified above. Therefore, projects that do not exceed the bright-line threshold would have a nominal, and therefore, less than cumulatively considerable impact on GHG emissions.
- **Tier 4.** If emissions exceed the screening threshold, a more detailed review of the project's GHG emissions is warranted. South Coast AQMD has identified an efficiency target for projects that exceed the screening threshold. The current recommended approach is per capita efficiency targets. The South Coast AQMD Working Group identified a 2020 efficiency target of 4.8 $MTCO_2e$ per year per service population ($MTCO_2e$/year/SP) for project-level analyses and 6.6 $MTCO_2e$/year/SP for plan-level projects (e.g., general plans). Service population is defined as the sum of the residential and employment populations provided by a project.

Proposed Project Thresholds

If project emissions are below the 3,000 $MTCO_2e$ bright-line screening threshold, GHG emissions impacts would be considered less than significant.

This General Plan Update analysis also analyzes the potential for conflict with the GHG reduction goals established under SB 32 and Executive Order S-03-05, which require a reduction in statewide GHG emissions from existing conditions to achieve a 40 percent reduction in GHG emissions by 2030 and an 80 percent reduction in GHG emissions by 2050, respectively. For a project with a buildout year of 2045, this would be a 70 percent reduction compared to 2020 levels.

Mass Emissions and Health Effects

On December 24, 2018, in the case, *Sierra Club et al. v. County of Fresno et al.* (Friant Ranch), the California Supreme Court determined that the EIR for the proposed Friant Ranch project failed to adequately analyze the project's air quality impacts on human health. The EIR prepared for the project, which involved a master planned retirement community in Fresno County, showed that project-related mass emissions would exceed the San Joaquin Valley Air Pollution Control District's (SJVAPCD) regional significance thresholds. In its findings, the California Supreme Court affirmed the holding of the Court of Appeal that EIRs for projects must not only identify impacts to human health, but also provide an "analysis of the correlation between the project's emissions and human health impacts" related to each criteria air pollutant that exceeds the regional significance thresholds or explain why it could not make such a connection. In general, the ruling focuses on the correlation of emissions of toxic air contaminants and criteria air pollutants and their impact to human health.

In 2009, the US EPA issued an endangerment finding for six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) in order to regulate GHG emissions from passenger vehicles. The endangerment finding is based on evidence that shows an increase in mortality and morbidity associated with increases in average temperatures, which increase the likelihood of heat waves and ozone levels. The effects of climate change are identified in Table 4.8-2. While these identified effects such as sea level rise and increased in extreme weather, can indirectly impact human health, neither the EPA nor CARB has established ambient air quality standards for GHG emissions. The state's GHG reduction strategy outlines a path to avoid the most catastrophic effects of climate change. Yet the state's GHG reduction goals and strategies are based on the state's path toward reducing statewide cumulative GHGs as outlined in AB 32, SB 32, and Executive Order S-03-05.

As above, the two significance thresholds that the City uses to analyze GHG impacts are based on achieving the statewide GHG reduction goals (GHG-1) and relying on consistency with policies or plans adopted to reduce GHG emissions (GHG-2). Further, because no single project is large enough to result in a measurable increase in global concentration of GHG emissions, climate change impacts of a project are considered on a cumulative basis. Without federal ambient air quality standards for GHG emissions and given the cumulative nature of GHG emissions and the City's significance thresholds that are tied to reducing the state's cumulative GHG emissions, it is not feasible at this time to connect the project's specific GHG emission to the potential health impacts of climate change.

5.7.4 Regulatory Requirements and General Plan Policies

5.7.4.1 REGULATORY REQUIREMENTS (RR)

RR GHG-1 New buildings are required to achieve the current California Building Energy and Efficiency Standards (Title 24, Part 6) and California Green Building Standards Code (CALGreen) (Title 24, Part 11). The 2019 Building and Energy Efficiency Standards were effective on January 1, 2020. The Building Energy and Efficiency Standards and CALGreen are updated tri-annually.

RR GHG-2 Construction activities are required to adhere to California Code of Regulations, Title 13, Section 2499, which restricts nonessential idling of construction equipment to five minutes or less.

RR GHG-3 New buildings are required to adhere to the California Green Building Standards Code and Water Efficient Landscape Ordinance requirements to increase water efficiency and reduce urban per capita water demand.

RR GHG-3 CARB's Renewable Portfolio Standard (RPS) is a foundational element of the state's emissions reduction plan. These mandates apply directly to investor-owned utilities, which in the case of the General Plan Update is Southern California Edison. The RPS targets are 50 percent renewable resources target by December 31, 2026, and 60 percent target by December 31, 2030. SB 100 also requires that retail sellers and local, publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt hours of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024; 52 percent by December 31, 2027; and 60 percent by December 31, 2030.

RR GHG-4 The Low Carbon Fuel Standard for transportation fuels requires that California's transportation fuels reduce their carbon intensity by at least 10 percent by 2020.

RR GHG-5 The 2007 Energy Bill creates new federal requirements for increases in fleetwide fuel economy for passenger vehicles and light trucks under the federal Corporate Average Fuel Economy standards. The federal legislation requires a fleetwide average of 35 miles per gallon to be achieved by 2020. The National Highway Traffic Safety Administration is directed to phase in requirements to achieve this goal. Analysis by CARB suggests that this will require an annual improvement of approximately 3.4 percent between 2008 and 2020.

RR GHG-6 Assembly Bill 1493 (Pavley) required CARB to develop and adopt regulations designed to reduce greenhouse gases emitted by passenger vehicles and light-duty trucks beginning with the 2009 model year. The standards set within the Pavley regulations reduced GHG emissions from California passenger vehicles by about 22 percent in 2012 and about 30 percent in 2016.

RR GHG-7 California's Green Building Standards Code (CALGreen) requires the recycling and/or salvaging for reuse at minimum of 65 percent of the nonhazardous construction and

demolition waste generated during most "new construction" projects (CALGreen §§ 4.408 and 5.408). Construction contractors are required to submit a construction waste management plan that identifies the construction and demolition waste materials to be diverted from disposal by recycling, reuse on the project, or salvaged for future use or sale and the amount (by weight or volume).

5.7.4.2 GENERAL PLAN UPDATE POLICIES

The following are relevant policies of the Santa Ana General Plan Update that may reduce potential GHG impacts.

Circulation Element

- **Policy 1.7 Proactive Mitigation.** Proactively mitigate potential air quality, noise, congestion, safety, and other impacts from the transportation network on residents and business.
- **Policy 1.8 Environmental Sustainability.** Consider air and water quality, noise reduction, neighborhood character, and street-level aesthetics when making improvements to travelways.
- **Policy 3.3 Safe Routes to School.** Lead the development and implementation of safer routes to school by partnering with the school district, residents, property owners, and community stakeholders.
- **Policy 3.4 Regional Coordination.** Coordinate development of the City's active transportation and transit network with adjacent jurisdictions, OCTA, and other appropriate agencies.
- **Policy 3.5 Education and Encouragement.** Encourage active transportation choices through education, special events, and programs.
- **Policy 3.7 Complete Streets Design.** Enhance streets to facilitate safe walking, bicycling, and other nonmotorized forms of transportation through community participatory design.
- **Policy 4.1 Intense Development Areas.** Program multimodal transportation and public realm improvements that support new development in areas along transit corridors and areas planned for high intensity development.
- **Policy 4.2 Project Review.** Encourage active transportation, transit use, and connectivity through physical improvements and public realm amenities identified during the City's Development Review process.
- **Policy 4.3 Transportation Management.** Coordinate with OCTA, employers, and developers to utilize TDM (transportation demand management) strategies and education to reduce vehicle trips and parking demands.
- **Policy 4.5 Land Use Development Design**. Ensure that the placement of buildings, design features, and street environment create a desirable and active streetscape.

- **Policy 4.6 Roadway Capacity Alternatives.** Promote reductions in automobile trips and vehicle miles traveled by encouraging transit use and nonmotorized transportation as alternatives to augmenting roadway capacity.
- **Policy 4.7 Parking.** Explore and implement a flexible menu of parking options and other strategies to efficiently coordinate the response to parking demands
- **Policy 4.9 Air Pollution Mitigation.** Consider land use, building, site planning, and technology solutions to mitigate exposure to transportation related air pollution.
- **Policy 5.4 Green Streets.** Leverage opportunities along streets and public rights-of-way to improve water quality through use of landscaping, permeable pavement, and other best management practices.
- **Policy 5.6 Clean Fuels and Vehicles.** Encourage the use of alternative fuel vehicles and mobility technologies through the installation of supporting infrastructure.
- **Policy 5.9 Street Trees.** Support the greening of City streets through the establishment and maintenance of an urban forest to improve street aesthetics, filter pollution, and address GHG emissions.

Community Element

- **Policy 3.2 Healthy Neighborhoods.** Continue to support the creation of healthy neighborhoods by addressing public safety, improving the built environment, and maintaining building code standards.
- **Policy 3.4 Safe Mobility.** Promote the overall safety of multi-modal streets by developing local and regional programs that educate and inform motorists of non-motorized roadway users.
- **Policy 3.7 Active Lifestyles.** Support programs that create safe routes to schools and other destinations to promote walking, biking and active lifestyles.

Conservation Element

- **Policy 1.1 Regional Planning Efforts.** Coordinate air quality planning efforts with local and regional agencies to meet State and Federal ambient air quality standards in order to protect all residents from the health effects of air pollution.
- **Policy 1.2 Climate Action Plan.** Consistency with emission reduction goals highlighted in the Climate Action Plan shall be considered in all major decisions on land use and investments in public infrastructure.
- **Policy 1.3 Education.** Promote efforts to educate businesses and the general public about air quality standards, health effects, and best practices they can make to improve air quality and reduce greenhouse gas emissions.
- **Policy 1.4** Development Standards. Support new development that meets or exceeds standards for energy-efficient building design and site planning.

- **Policy 1.5 Sensitive Receptor Decisions.** Consider potential impacts of stationary and non-stationary emission sources on existing and proposed sensitive uses and opportunities to minimize health and safety risks.

- **Policy 1.6 New and Infill Residential Development.** Promote development that is mixed-use, pedestrian-friendly, transit oriented, and clustered around activity centers.

- **Policy 1.7 Housing and Employment Opportunities.** Improve the City's jobs/housing balance ratio by supporting development that provides housing and employment opportunities to enable people to live and work in Santa Ana.

- **Policy 1.8 Promote Alternative Transportation.** Promote use of alternate modes of transportation in the City of Santa Ana, including pedestrian, bicycling, public transportation, car sharing programs and emerging technologies.

- **Policy 1.9 Public Investment Alternative Transportation Infrastructure.** Continue to invest in infrastructure projects that support public transportation and alternate modes of transportation in the City of Santa Ana, including pedestrian, bicycling, public transportation, car sharing programs, and emerging technologies.

- **Policy 1.10 Transportation Management.** Continue to support and invest in improvements to the City's Transportation Management System, including projects or programs that improve traffic flow and reduce traffic congestion.

- **Policy 1.11 Public Investment in Low- or Zero Emission Vehicles.** Continue to invest in low-emission or zero-emission vehicles to replace the City's gasoline powered vehicle fleet and to transition to available clean fuel sources such as bio-diesel for trucks and heavy equipment.

- **Policy 1.12 Sustainable Infrastructure.** Encourage the use of low or zero emission vehicles, bicycles, non-motorized vehicles, and car-sharing programs by supporting new and existing development that includes sustainable infrastructure and strategies such as vehicle charging stations, drop-off areas for ride-sharing services, secure bicycle parking, and transportation demand management programs.

- **Policy 1.13 City Contract Practices.** Support businesses and contractors that use reduced-emissions equipment for city construction projects and contracts for services, as well as businesses that practice sustainable operations.

- **Policy 1.14 Transportation Demand Management.** Require and incentivize projects to incorporate Transportation Demand Management (TDM) techniques.

- **Policy 2.3 Resource Management**. Efficiently manage soil and mineral resource operations to eliminate significant nuisances, hazards, or adverse environmental effects on neighboring land uses.

- **Policy 3.1 Interagency Coordination.** Consult with regional agencies and utility companies to pursue energy efficiency goals and expand renewable energy strategies.
- **Policy 3.2 Education Programs.** Support education programs to provide information on energy conservation and alternatives to non-renewable energy sources.
- **Policy 3.3 Development Patterns**. Promote energy efficient-development patterns by clustering mixed use developments and compatible uses adjacent to public transportation.
- **Policy 3.4 Site Design.** Encourage site planning and subdivision design that incorporates the use of renewable energy systems.
- **Policy 3.5 Landscaping.** Encourage the planting of native and diverse tree species to reduce heat island effect, reduce energy consumption, and contribute to carbon mitigation.
- **Policy 3.6 Life Cycle Costs.** Encourage construction and building development practices that use renewable resources and life cycle costing in construction and operating decisions.
- **Policy 3.7 Energy Conservation Design and Construction.** Incorporate energy conservation features in the design of new construction and rehabilitation projects.
- **Policy 3.8 Energy-Efficient Public Facilities.** Promote and encourage efficient use of energy and the conservation of available resources in the design, construction, maintenance, and operation of public facilities, infrastructure, and equipment.
- **Policy 3.9 Energy Generation in Public Facilities.** Encourage and support the generation, transmission, use, and storage of locally-distributed renewable energy in order to promote energy independence, efficiency, and sustainability.
- **Policy 3.10 Energy Conservation in Public Projects.** Work with businesses and contractors that use energy-efficient practices in the provision of services and equipment for city construction projects.
- **Policy 3.11 Energy-Efficient Transportation Infrastructure.** Continue to support public and private infrastructure for public transportation such as bus routes, rail lines, and the OC Streetcar.
- **Policy 4.1 Water Use.** Encourage and educate residents, business owners, and operators of public facilities to use water wisely and efficiently.
- **Policy 4.2 Landscaping.** Encourage public and private property owners to plant native or drought-tolerant vegetation.
- **Policy 4.3 Recycled Water Systems.** Continue to coordinate with the Orange County Water District, Orange County Sanitation District, and developers for opportunities to expand use of reclaimed water systems.

- **Policy 4.4 Irrigation Systems.** Promote irrigation and rainwater capture systems that conserve water to support a sustainable community.
- **Policy 4.5 Water Supply.** Continue to collaborate with Orange County Water District and Metropolitan Water District to ensure reliable, adequate, and high quality sources of water supply at a reasonable cost.
- **Policy 4.6 Water Quality.** Work with public and private property owners to reduce storm water runoff and to protect the water quality percolating into the aquifer and into any established waterway.

Economic Prosperity Element

- **Policy 2.9 Energy Conservation.** Collaborate with utility providers and regional partners to encourage business and industry to improve performance in energy efficiency, water conservation, and waste reduction.
- **Policy 2.10 Green Business.** Support the growth of a diverse green business sector that facilitates and promotes environmental sustainability and creates a competitive advantage for business attraction activities.

Land Use Element

- **Policy 1.5 Diverse Housing Types.** Incentivize quality infill residential development that provides a diversity of housing types and accommodates all income levels and age groups.
- **Policy 1.6 Transit Oriented Development.** Encourage residential mixed-use development, within the City's District Centers and Urban Neighborhoods, and adjacent to high quality transit.
- **Policy 1.7 Active Transportation Infrastructure.** Invest in active transportation connectivity between activity centers and residential neighborhoods to encourage healthy lifestyles.
- **Policy 2.5 Benefits of Mixed Use.** Encourage infill mixed-use development at all ranges of affordability to reduce vehicle miles travelled, improve jobs/housing balance, and promote social interaction.
- **Policy 2.10 Smart Growth.** Focus high density residential in mixed-use villages, designated planning focus areas, Downtown Santa Ana, and along major travel corridors.
- **Policy 3.8 Sensitive Receptors.** Avoid the development of sensitive receptors in close proximity to land uses that pose a hazard to human health and safety, due to the quantity, concentration, or physical or chemical characteristics of the hazardous materials that they utilize, or the hazardous waste that they generate or emit.
- **Policy 3.9 Improving Health.** Improve the health of residents by discontinuing the operation of noxious, hazardous, dangerous, and polluting uses that are in close proximity to sensitive receptors
- **Policy 4.1 Complementary Uses.** Promote complete neighborhoods by encouraging a mix of complementary uses, community services, and people places within a walkable area.

- **Policy 4.3 Sustainable Land Use Strategies.** Encourage land uses and strategies that reduce energy and water consumption, waste and noise generation, air quality impacts, and light pollution.
- **Policy 4.4 Natural Resource Capture.** Encourage the use of natural processes to capture rainwater runoff, sustainable electric power, and passive climate control.
- **Policy 4.5 VMT Reduction.** Concentrate development along high-quality transit corridors to reduce vehicle miles traveled and transportation related carbon emissions.

Open Space Element

- **Policy 1.6 Sustainable Landscape.** Promote citywide use of drought tolerant landscape and development practices for wise water use and energy consumption.

Public Services Element

- **Policy 1.7 Sustainable Practices.** Use sustainable and energy efficient building and maintenance practices as part of the development or rehabilitation of any public facility or capital improvement.
- **Policy 3.2 Wastewater Service.** Provide and maintain wastewater collection facilities which adequately serve existing land uses and future development projects while maximizing cost efficiency.
- **Policy 3.3 Wastewater Technology.** Explore new technologies that treat and process wastewater that reduce overall capacity needs of centralized wastewater systems.
- **Policy 3.4 Drainage Facilities.** Expand and maintain storm drain facilities to accommodate the needs of existing and planned development.
- **Policy 3.5 Green Infrastructure.** Incorporate sustainable design and Low Impact Development (LID) techniques for storm water facilities and new development to achieve multiple benefits, including enhancing preserving and creating open space and habitat and improving runoff water quality.
- **Policy 3.6 Water Service**. Provide water quality and service that meets or exceeds State and Federal drinking water standards.
- **Policy 3.7 Emergency Connections.** Maintain emergency connections with local and regional water suppliers in the event of delivery disruption.
- **Policy 3.8 Conservation Strategies.** Implement cost effective conservation strategies and programs that increase water use efficiency.
- **Policy 3.9 Household Recycling.** Expand household recycling services and educational awareness programs.

- **Policy 3.10 Development Projects.** Encourage new development and reuse projects to incorporate recycling and organics collection activities aligned with state waste reduction goals.
- **Policy 3.11 Waste Collection.** Support infill development projects that provide adequate and creative solutions for waste and recycling collection activities.
- **Policy 3.12 Sewer and Water.** Maintain and upgrade sewer and water infrastructure through impact fees from new development and exploring other funding sources.

Safety Element

- **Policy 2.1 Regional Collaboration.** Consult and collaborate with federal, state, and regional agencies to identify and regulate the disposal and storage of hazardous materials and prevent the illegal transportation and disposal of hazardous waste.
- **Policy 2.2 Hazardous Waste Generators.** Collaborate with appropriate agencies to identify and inventory all users and handlers of hazardous materials to proactively mitigate potential impacts.
- **Policy 2.3 Transportation and Storage.** Coordinate with the County of Orange, the California Department of Transportation, and other relevant parties to enforce state and local laws regulating the storage and transport of hazardous materials within the City of Santa Ana, and limit truck routes through the City to arterials streets away from natural habitats and sensitive land uses.
- **Policy 2.4 Planning and Remediation.** Determine the presence of hazardous materials and/or waste contamination prior to approval of new uses and require that appropriate measures be taken to protect the health and safety of site users and the community.
- **Policy 2.6 Existing Sensitive Uses.** Partner and collaborate with property owners, businesses, and community groups to develop strategies to protect and minimize risks from existing hazardous material sites to existing nearby sensitive uses.

Urban Design Element

- **Policy 1.6 Active Transportation Infrastructure.** Support the creation of citywide public street and site amenities that accommodate and promote an active transportation-friendly environment.
- **Policy 2.10 Greening the Built Environment.** Promote planting of shade trees and require, where feasible, site design that uses appropriate tree species to shade parking lots, streets, and other facilities with the goal of reducing the heat island effect.
- **Policy 2.11 Sustainable Practices.** Encourage sustainable development through the use of drought tolerant landscaping, permeable hardscape surfaces, and energy efficient building design and construction.
- **Policy 3.10 Coordinated Street Improvement Plans.** Coordinate citywide landscape medians and street trees with land use plans and development projects.

- **Policy 5.4 Intersections for all Travel Modes.** Strengthen active transportation connections and amenities at focal intersections to promote a pleasant and safe experience for non-motorized forms of travel.

5.7.5 Environmental Impacts

5.7.5.1 METHODOLOGY

This GHG evaluation was prepared in accordance with the requirements of CEQA to determine if significant GHG impacts are likely to occur in conjunction with future development that would be accommodated by the General Plan Update. The City's GHG emissions inventory includes the following sectors:

- **Transportation.** Transportation emissions forecasts were modeled using emissions data from CARB's EMFAC2017, version 1.0.7, web database. Additionally, the SAFE Vehicle Part One Rule and Final SAFE Rule adjustment factor for CO_2 were applied for light duty vehicles (i.e., LDA, LDT1, LDT2, and MDV) per CARB guidance for year 2045 emissions (CARB 2020). Model runs were based on daily per-capita VMT data provided by IBI Group (see Volume III, Appendix K) and calendar year 2020 (existing) and 2045 emission rates.[5] The VMT utilized is based on the origin-destination approach and assumes the full trip length for vehicle trips that occur entirely within the city (i.e., internal-internal trips). For external-internal/internal-external trips, the trip lengths are based on the destinations/attractions near the boundary assumed in the Orange County Transportation Authority traffic model in addition to the likely attractions/destinations beyond the immediate developments near the boundary limit.

- **Energy.** Emissions associated with natural gas use for residential and nonresidential land uses in the city were modeled based on data provided by SCE for years 2012 through 2018 and by SoCalGas for years 2014 to 2018. Forecasts are adjusted for increases in population and employment in the city.

- **Off-Road Equipment.** Calendar year 2020 emission rates for Orange County obtained from CARB's OFFROAD2017, version 1.0.1, web database were used to estimate criteria air pollutant emissions from light commercial and construction equipment in the City. OFFROAD2017 is a database of equipment use and associated emissions for each county compiled by CARB. In order to determine the percentage of emissions attributable to the city, light commercial equipment is estimated based on employment for Santa Ana as a percentage of Orange County. Construction equipment use is estimated based on building permit data for Santa Ana and County of Orange from data compiled by the US Census. The light commercial equipment emissions forecast is adjusted for changes in employment in the city. It is assumed that construction emissions for the forecast year would be similar to historical levels. Annual emissions are derived by multiplying daily emissions by 365 days.

[5] The Year 2045 inventory represents the projected emissions that the existing land uses would generate in the future, using year 2045 emission factors for on-road vehicles. To isolate the impacts related to the change in land uses proposed under the General Plan update, emissions related to the update will be based on the difference in emissions generated by the existing and proposed land uses under year 2045 conditions. This approach is taken because existing land uses would be subject to regulations that come into effect in the future that reduce mobile-source emissions. Thus, the level of emissions the existing land uses generate today would not be generated in perpetuity, but would be affected by these state regulations.

- **Water/Wastewater.** GHG emissions from this sector include indirect GHG emissions from the embodied energy associated with water use and wastewater generation and fugitive GHG emissions from processing wastewater. The total annual existing and horizon year proposed project water demand and wastewater generation (gallons per year) in the city are based on average daily rates (gallons per day) estimated by Fuscoe Engineering and multiplied by 365 days. Electricity use from water use is estimated using energy rates identified by the CEC (CEC 2006b). Then energy is multiplied by the carbon intensity of energy. Wastewater treatment also results in fugitive GHG emissions from wastewater processing. Fugitive emissions from wastewater treatment in the city were calculated using the emission factor's in CARB's LGOP, Version 1.1.

- **Solid Waste Disposal.** GHG emissions from solid waste disposed of by residents and employees in the city were quantified based on the waste-in-place method. This method assumes that the degradable organic component in waste decays slowly throughout a few decades, during which CH_4 and biogenic CO_2 are formed. If conditions are constant, the rate of CH_4 production depends solely on the amount of carbon remaining in the waste. As a result, emissions of CH_4 from waste deposited in a disposal site are highest in the first few years, then gradually decline. Significant CH_4 production typically begins one or two years after waste disposal in a landfill and continues for 10 to 60 years or longer. Waste disposal was averaged over several years to account for fluctuations in average annual solid waste disposal. Waste generated was averaged over a three-year period (2015-2017) based on data obtained from the California Department of Resources Recycling and Recovery (CalRecycle), to provide an estimate of GHG emissions for existing conditions (baseline year). GHG emissions from solid waste disposal in the baseline year were modeled using CARB's Landfill Emissions Tool, version 1.3, which includes waste characterization data from CalRecycle. Because the landfill gas captured is not under the jurisdiction of the City of Santa Ana, the landfill gas emissions from the capture system are not included in the inventory. Only fugitive sources of GHG emissions from landfills are included. Modeling assumes a 75 percent reduction in fugitive GHG emissions from the landfill gas capture system. The landfill gas capture efficiency is based on CARB's LGOP, version 1.1. Emissions were adjusted to the AR5 GWP assigned for CH_4. Total GHG emissions from waste disposal in 2045 were forecast based on the percent increase in service population for the city. The emissions forecast does not account for reductions from increasing waste diversion.

Industrial sources of emissions that require a permit from South Coast AQMD are not included in the community inventory. However, due to the 15/15 Rule, natural gas and electricity use data for industrial land uses may also be aggregated with the nonresidential land uses in the data provided by SCE.[6] Life-cycle emissions are not included in this analysis because not enough information is available for the proposed General Plan Update; and therefore, they would be speculative. Black carbon emissions are not included in the GHG analysis

[6] The 15/15 Rule was adopted by the California Public Utilities Commission in the Direct Access Proceeding (CPUC Decision 97-10-031) to protect customer confidentiality. The 15/15 rule requires that any aggregated information provided by a utility must be made up of at least 15 customers, and a single customer's load must be less than 15 percent of an assigned category. If the number of customers in the compiled data is below 15, or if a single customer's load is more than 15 percent of the total data, categories must be combined before the information is released. The Rule further requires that if the 15/15 Rule is triggered for a second time after the data have been screened once already using the 15/15 Rule, the customer be dropped from the information provided.

because CARB does not include this pollutant in the State's GHG emissions inventory and treats this short-lived climate pollutant separately.[7].

5.7.5.2 IMPACT ANALYSIS

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

Impact 5.7-1: Implementation of the proposed General Plan Update would result in a decrease in GHG emissions in horizon year 2045 from existing baseline but may not meet the long-term GHG reduction goal under Executive Order S-03-05. [Threshold GHG-1]

Development under the General Plan Update (GPU) would contribute to global climate change through direct and indirect emissions of GHG from land uses within the city. A general plan does not directly result in development without additional approvals. Before any development can occur in the city, it must be analyzed for consistency with the GPU, zoning requirements, and other applicable local and State requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits.

Horizon Year 2045 Emissions Forecast

Buildout of the proposed GPU is not linked to a specific development time frame but is assumed over a 25-year horizon. Implementation of the GPU by the horizon year of 2045 would result in a net increase of 96,855 residents and 11,436 employees in the city. Development that would be accommodated by the GPU would generate a net increase of 111,835 daily VMT at buildout (see Appendix K). The community GHG emissions inventory for the GPU at buildout compared to existing conditions is in Table 5.7-6, *GHG Emissions Forecast for GPU Horizon Year 2045*.

[7] Particulate matter emissions, which include black carbon, are analyzed in Section 5.3, Air Quality. Black carbon emissions have sharply declined due to efforts to reduce on-road and off-road vehicle emissions, especially diesel particulate matter. The State's existing air quality policies will virtually eliminate black carbon emissions from on-road diesel engines within ten years (CARB 2017a).

Table 5.7-6 GHG Emissions Forecast for GPU Horizon Year 2045

Category	GHG Emissions ($MTCO_2e$/Year)			
	Existing (2020)	General Plan 2045	Net Change	Percent Change
Transportation[1]	1,463,006	1,061,237	-401,769	-27%
Residential Energy[2]	208,050	303,797	95,747	46%
Non-Residential Energy[2]	432,202	463,292	31,090	7%
Solid Waste Disposal[3]	56,603	69,017	12,414	22%
Water/Wastewater[4]	34,084	41,688	7,604	22%
Off-Road Equipment[5]	18,678	17,713	-965	-5%
Total Community Emissions	**2,212,622**	**1,956,744**	**-255,878**	**-12%**
South Coast AQMD Bright Line Threshold	—	—	3,000	—
Exceeds the Bright-Line Threshold	—	—	**No**	—
Adjusted Service Population (SP)[6]	460,686	566,598	105,912	23%
$MTCO_2e$/SP	4.8	3.5	-1.3	-28%

Notes: Emissions may not total to 100 percent due to rounding. Based on GWPs in the IPCC Fifth Assessment Report (AR5).

1 EMFAC2017 Version 1.0.2. Based on daily VMT provided by IBI Group. Transportation sector includes the full trip length for internal-internal trips and various trip lengths for external-internal/internal-external trips (see Appendix K). VMT per year based on a conversion of VMT x 347 days per year to account for less travel on weekend, consistent with CARB statewide GHG emissions inventory methodology (CARB 2008). The CARB adjustment factor to account for the SAFE Vehicle Rule Part One and the Final Safe Rule are incorporated for year 2045 emissions (CARB 2020).

2 Electricity usage is provided by SCE. Natural gas usage data provided by SoCalGas. The carbon intensity of the purchased electricity is based on SCE 2020 reported CO_2e intensity factor of 513 lbs/MWh (SCE 2019). For natural gas, the intensity factors for CO_2, CH_4, and NO_2 are from the LGOP, version 1.1 (CARB 2010).

3 Landfill Emissions Tool Version 1.3 and CalRecycle. Waste generation based on waste commitment for the City of Santa Ana obtained from CalRecycle and adjusted to account for solid waste associated with SOI. Assumes 75 percent of fugitive GHG emissions are captured within the landfill's gas capture system. The landfill gas capture efficiency is based on CARB's Local Government Operations Protocol (LGOP), version 1.1. Significant CH_4 production typically begins one or two years after waste disposal in a landfill and continues for 10 to 60 years or longer. Therefore, the highest CH_4 emissions from waste disposal in a given year are reported.

4 LGOP, version 1.1, based on the water demand provided by Fuscoe Engineering. Wastewater usage is assumed to be 95% of water demand.

5 OFFROAD2017 Version 1.0.1. Light commercial equipment emissions estimated based on employment for the City of Santa Ana as a percentage of Orange County. Construction emissions estimated based on housing permit data for Orange County and the City of Santa Ana from the US Census. Area sources exclude emissions from fireplaces.

6 Service population (SP) consists of the aggregate of total employees and population within the study area. When aggregating employees and residents for transportation efficiency, an employee reduction factor was applied to account for overlaps in the two (employees who are also residents). Reduction factors were applied to both the City of Santa Ana employees then aggregated to the resident population. Reduction factors are based on employment data within the SCAG Local Profiles Reports (2019) for the City of Santa Ana. The SCAG reports show that 20.8 percent of employees within the City are also residents of the City (IBI 2020). Existing service population consists of 334,774 people and 158,980 employees within the City of Santa Ana. The 2045 projected service population consists of 431,629 and 170,416 employees within the City.

As shown in Table 5.7-6, buildout of the land uses accommodated under the General Plan Update would result in a net decrease of 255,878 $MTCO_2e$ of GHG emissions (12 percent decrease in GHG emissions) from existing conditions and would not exceed the 3,000 $MTCO_2e$ South Coast AQMD bright-line screening threshold. In addition, while buildout under the GPU is projected to increase adjusted service population by 105,912 persons (a 23 percent increase), emissions per person would decrease compared to existing baseline. Emissions per service population would decrease to 3.5 $MTCO_2e$/SP in horizon year 2045 from 4.8 $MTCO_2e$/SP for the existing baseline year. The primary reason for the decrease in overall community-wide

GHG emissions, despite an increase in population and employment in the city, is a result of regulations adopted to reduce GHG emissions and turnover of California's on-road vehicle fleets.

Consistency with SB 32 and Executive Order S-03-05 GHG Reduction Targets

Though the proposed project would not generate an increase in GHG emissions from the CEQA baseline in the 2045 horizon year forecast, this EIR also analyzes the potential for the project to conflict with the GHG reduction goals established under SB 32 and Executive Order S-03-05, which require a reduction in statewide GHG emissions from existing conditions to a 40 percent reduction below 1990 levels in GHG emissions by 2030 and an 80 percent reduction by 2050. This PEIR assumes that the CEQA baseline (2019 emissions) reflects the AB 32 goal in 2020. As a result, at the GPU horizon year of 2045, the city would need to reduce GHG emissions by 70 percent to ensure it is on a trajectory to achieve the long-term goal under Executive Order S-03-05.

As shown in Table 5.7-6 and as discussed, it is anticipated that implementation of the proposed General Plan Update would result in an overall net decrease in emissions in horizon year 2045 compared to existing baseline. However, GHG emissions reduction are only 12 percent less than the CEQA baseline and not the 70 percent necessary to ensure the city is on a trajectory to achieve the long-term year 2050 reduction goal of Executive Order S-03-05. Reduction strategies to meet the long-term 2050 GHG reduction goal in addition to establishment of a 2050 reduction target would be included in the planned future updates to the Climate Action Plan. Additionally, state strategies to achieve post-2030 targets would be necessary. Therefore, until such time, GHG emissions impacts for the proposed GPU are considered potentially significant in regard to meeting the long-term year 2050 reduction goal.

General Plan Policies That May Reduce GHG Emissions

While growth in the city would cumulatively contribute to GHG emissions impacts, implementation of the proposed GPU goals and policies could also help minimizing VMT and mobile-source emissions.

- **Conservation Element, Goal 1.** Protect air resources, improve regional and local air quality, and minimize the impacts of climate change (Policies 1.8 through 1.12 and Policy 1.14).
- **Land Use Element, Goal 1.** Provide a land use plan that improves quality of life and respects our existing community (Policies 1.6 and 1.7).
- **Land Use Element, Goal 2.** Provide a balance of land uses that meet Santa Ana's diverse needs (Policies 2.5 and 2.10).
- **Urban Design Element, Goal 1.** Improve the physical character and livability of the City to promote a sense of place, positive community image, and quality environment (Policy 1.6).
- **Urban Design Element, Goal 5.** Create focal points at major intersections to enhance community identity and open space (Policy 5.4).

For example, policies 1.8 through 1.10 of the conservation element focus on promoting alternative forms of transportation and investing in infrastructure for public and active transport. Policies 1.7 of the land use element and policies 1.6 and 5.4 of the urban design element would promote strengthening and development of active transportation connections.

While energy sector emissions would increase overall under the proposed GPU due to the forecast growth in population, it is anticipated that policies proposed under the GPU would contribute to reducing energy sector emissions through increasing energy efficiency, energy conservation, and use of renewable energy. For example, policy 1.12 of the conservation element encourages use of low emission modes of travel by supporting development of sustainable infrastructure. Policy 3.9 of the conservation element would encourage generation of renewable energy in public facilities to promote energy independence, efficiency, and sustainability. Policy 4.3 of the land use element, policy 1.6 of the open space element, policy 1.7 of the public service element, and policy 2.11 of the urban design element all encourage strategies to reduce consumption of resources, promote sustainable development building practices. Implementation of these policies, in addition to the other proposed policies of the GPU would contribute to minimizing GHG emissions associated with the city to the extent feasible. However even with the implementation of GPU policies, impacts would remain potentially significant.

Level of Significance Before Mitigation: While implementation of RR GHG-1 through RR GHG-7 and Conservation Policies 1.8, 1.9, 1.10, 1.12, 1.14, and 3.9; Land Use Policies 1.6, 1.7, 2.5, 2.10, and 4.3; Open Space Policies 1.6, Public Services Policy 1.7, Urban Design Policies 1.6,2.11, and 5.4 would contribute to the reduction of GHG emissions in the City, Impact 5.7-1 will be potentially significant.

Impact 5.7-2: The General Plan Update would not conflict with the plans adopted for the purpose of reducing GHG emissions. [Threshold GHG-2]

Applicable plans adopted for the purpose of reducing GHG emissions include CARB's Scoping Plan, SCAG's Connect SoCal Plan, and the City's Climate Action Plan. A consistency analysis with these plans is presented below.

CARB Scoping Plan

The CARB Scoping Plan is applicable to state agencies, but is not directly applicable to cities/counties and individual projects (i.e., the Scoping Plan does not require the City to adopt policies, programs, or regulations to reduce GHG emissions). However, new regulations adopted by the state agencies outlined in the Scoping Plan result in GHG emissions reductions at the local level. As a result, local jurisdictions benefit from reductions in transportation emissions rates, increases in water efficiency in the building and landscape codes, and other statewide actions that would affect a local jurisdiction's emissions inventory from the top down. Statewide strategies to reduce GHG emissions include the LCFS and changes in the corporate average fuel economy standards.

Project GHG emissions shown in Table 5.7-6 include reductions associated with statewide strategies that have been adopted since AB 32. Development projects accommodated under the General Plan Update are required to adhere to the programs and regulations identified by the Scoping Plan and implemented by State, regional,

and local agencies to achieve the statewide GHG reduction goals of AB 32. Future development projects would be required to comply with these GHG emissions reduction measures because they are statewide strategies. For example, new buildings associated with land uses accommodated under the proposed land use plan of the GPU would be built to meet the CALGreen and Building Energy Efficiency Standards in effect at the time when applying for building permits. Furthermore, as discussed under Impact 5.7-1, the GPU includes policies that would help reduce GHG emissions and therefore help achieve GHG reduction goals. Therefore, overall, the General Plan Update would not obstruct implementation of the CARB Scoping Plan.

SCAG's Regional Transportation Plan/Sustainable Communities Strategy

SCAG adopted the Connect SoCal plan in May 2020. The Connect SoCal plan identifies that land use strategies that focus on new housing and job growth in areas rich with destinations and mobility options would be consistent with a land use development pattern that supports and complements the proposed transportation network. The overarching strategy in Connect SoCal is to provide for a plan that allows the southern California region to grow in more compact communities in transit priority areas and priority growth areas; provide neighborhoods with efficient and plentiful public transit; establish abundant and safe opportunities to walk, bike, and pursue other forms of active transportation; and preserve more of the region's remaining natural lands and farmlands (SCAG 2020b). The Connect SoCal plan contains transportation projects to help more efficiently distribute population, housing, and employment growth as well as projected development that is generally consistent with regional-level general plan data to promote active transport and reduce GHG emissions. The projected regional development, when integrated with the proposed regional transportation network identified in Connect SoCal, would reduce per capita vehicular travel-related GHG emissions and achieve the GHG reduction per capita targets for the SCAG region.

The GPU includes goals and policies that target transportation management and land use planning to develop energy efficient infrastructure that supports more public and active transport, thereby reducing VMT throughout the city. These goals and policies include those mentioned in Impact 5-7.1 as well as the following:

- **Conservation Element, Goal 3.** Reduce consumption of and reliance on non-renewable energy and support the development and use of renewable energy sources (Policies 3.3 and 3.11).
- **Land Use Element, Goal 4.** Support a sustainable Santa Ana through improvements to the built environment and a culture of collaboration (Policy 4.5).

Additionally, as demonstrated in Table 5.7-7, the GPU would be consistent with Connect SoCal goals. Furthermore, as discussed in Impact 5.13-1 of the *Population and Housing* section of this PEIR, implementation of the GPU would improve and maintain the jobs-housing balance in the city. Thus, the GPU would make it easier for city residents to both live and work in the city instead of commuting to other areas, which would contribute to minimizing VMT. Therefore, the GPU would not interfere with SCAG's ability to implement the regional strategies in Connect SoCal, and no impact would occur.

Table 5.7-7 General Plan Update Consistency with SCAG's "Connect SoCal" Regional Transportation Plan / Sustainable Communities Strategy

SCAG Transportation—Sustainable Communities Strategy	Implementing Policies/Strategies	Consistency
Focus Growth Near Destinations and Mobility Options. The Connect SoCal Plan aims to create dynamic, connected built environments that support multimodal mobility, reduce reliance on single-occupancy vehicles, and reduce GHG emissions is critical throughout the region. Implementation of SCAG's recommended growth strategies will help Priority Growth Areas (PGAs) accommodate 64 percent of forecasted household growth and 74 percent of forecasted employment growth between 2016 and 2045.	Additional local policies to ensure growth near destinations and mobility options: • Emphasize land use patterns that facilitate multimodal access to work, educational and other destinations • Focus on a regional jobs/housing balance to reduce commute times and distances and expand job opportunities near transit and along center-focused main streets • Plan for growth near transit investments and support implementation of first/last mile strategies • Promote the redevelopment of underperforming retail developments and other outmoded nonresidential uses • Prioritize infill and redevelopment of underutilized land to accommodate new growth, increase amenities and connectivity in existing neighborhoods • Encourage design and transportation options that reduce the reliance on and number of solo car trips (this could include mixed uses or locating and orienting close to existing destinations) • Identify ways to "right size" parking requirements and promote alternative parking strategies (e.g. shared parking or smart parking)	**Consistent:** The GPU includes policies that would focus growth near destinations and mobility options. Policies 4.1, 4.2, 4.3 and 4.5 of the circulation element would encourage new development in areas along transit corridors and areas planned for high intensity development. Policy 3.3 of the conservation element and policies 1.6, 2.5, 2.10, and 4.5 of the land use element would promote mixed use and infill developments near focus areas, major travel corridors, and public transportation options. These policies aim to reduce reliance on single-occupancy vehicles and reduce VMT while accommodating new growth in the city.
Promote Diverse Housing Choices. The Connect SoCal Plan notes that priority must be placed on urban and suburban infill, in existing/planned service areas and, for unincorporated county growth, within the planning boundary known as "Spheres of Influence" (SOI) where applicable and feasible. Growth at strategic nodes along key corridors, many of which are within HQTAs, will make transit a more convenient and viable option. In addition to new developments, production and preservation of permanent affordable housing to complement infill strategies is essential to achieving equitable outcomes.	Additional diverse housing strategies include: • Preserve and rehabilitate affordable housing and prevent displacement • Identify funding opportunities for new workforce and affordable housing development • Create incentives and reduce regulatory barriers for building context sensitive accessory dwelling units to increase housing supply • Provide support to local jurisdictions to streamline and lessen barriers to housing development that supports reduction of greenhouse gas emissions	**Consistent:** The GPU would strive to develop mixed use and infill projects that would offer diverse housing options for residents of all income levels (land use element, policies 1.6, 2.5, 2.10, 4.5). These policies include designated medium- to high-density residential areas in addition to mixed-use designated areas within focus areas, Downtown Santa Ana, and along major transit corridors. Furthermore, policy 3.1 of the conservation element, policy 1.7 of the land use element, and policies 1.6 and 5.4 of the urban design element all focus on supporting infrastructure for active and public transportation to provide mobility for residents and encourage alternative means of transit. These policies would cover improvements to active transportation connections and public transportation infrastructure for bus routes, rail lines, and streetcars.

Table 5.7-7 General Plan Update Consistency with SCAG's "Connect SoCal" Regional Transportation Plan / Sustainable Communities Strategy

SCAG Transportation—Sustainable Communities Strategy	Implementing Policies/Strategies	Consistency
Support Implementation of Sustainability Policies. Connect SoCal's conservation strategies consider the economic and ecological benefits of preserving natural areas and farmlands, while also maximizing their potential for GHG reduction. New housing and employment development is emphasized in PGAs such as Job Centers, Transit Priority Areas (TPAs), High Quality Transit Areas (HQTAs), and Neighborhood Mobility Areas (NMAs), and away from natural and farm lands on the edges of urban and suburban areas, to incentivize infill development and the concentration of varied land uses. This emphasis on concentrated, compact growth makes it easier to travel shorter distances, which reduces per-capita greenhouse gas emissions. In addition, natural areas and farmlands have the capacity to absorb and store atmospheric carbon dioxide, preventing additional contributions of GHG emissions.	Additional sustainable policies strategies include: • Pursue funding opportunities to support local sustainable development implementation projects that reduce greenhouse gas emissions • Support statewide legislation that reduces barriers to new construction and that incentivizes development near transit corridors and stations • Support local jurisdictions in the establishment of Enhanced Infrastructure Financing Districts (EIFDs), Community Revitalization and Investment Authorities (CRIAs), or other tax increment or value capture tools to finance sustainable infrastructure and development projects, including parks and open space • Work with local jurisdictions/communities to identify opportunities and assess barriers to implement sustainability strategies • Enhance partnerships with other planning organizations to promote resources and best practices in the SCAG region • Continue to support long range planning efforts by local jurisdictions • Provide educational opportunities to local decisions makers and staff on new tools, best practices and policies related to implementing the Sustainable Communities Strategy	**Consistent:** The GPU would implement policies that support sustainable practices for new developments and maintenance of the city. These policies would promote development of sustainable infrastructure for transportation (conservation element, policy 1.12), energy generation in public facilities (conservation element, policy 3.9), irrigation systems (conservation element, policy 4.4), and water facilities (public services element, policy 3.5). Policies from the circulation element focus on sustainable practices in transportation (circulation element, policies 1.7, 1.8, 4.9, 5.4, 5.6, and 5.9). Policies from the land use and urban design elements focus on encouraging sustainable land use strategies and practices, such as natural resource capture, sustainable electric power, and passive climate control (land use element, policies 4.3 and 4.4 and urban design element, policy 2.11). Policies 1.4, 3.3, 3.8, and 3.10 of the conservation element, policy 1.7 of the public services element, and policy 2.11 of the urban design element would all promote energy-efficient development patterns in building design, construction, and maintenance.

Source: SCAG 2020.

City of Santa Ana Climate Action Plan

Adopted by the City in December 2015, the CAP provides a comprehensive strategy for the reduction of GHG emissions to improve quality of life and promote economic prosperity throughout the city (Santa Ana 2015). Furthermore, the CAP provides measures to meet the goal of reducing community GHG emissions to a level 15 percent below 2008 emissions for 2020 and 30 percent below 2008 emissions by 2035 and reducing municipal emissions by 30 percent for 2020 and 40 percent by 2035. Cumulatively, the measures listed in the CAP are estimated to be 731,090 $MTCO_2e$/year by 2035. While these measures are not enough to meet the City's goal of 800,000 $MTCO_2e$/year, they serve as a foundation that can be built upon in later versions of the CAP to meet the 2035 goal. To ensure an effective and efficiency CAP, the City would modify measures based on their efficacy and add new measures based on future developments.

The GPU addresses improvements to transportation infrastructure and management to support alternate modes of transportation, including policies 3.4, 3.7, and 4.3 of the circulation element and policies 1.8, 1.9, 1.10, 1.12, 1.14, and 3.11 of the conservation element. These policies would reduce impacts from transportation and would result in a reduction in VMT and GHG emissions in the City. In addition, policy 3.3 of the conservation element and policies 1.6, 2.5, 2.10, and 4.5 of the land use element would promote mixed use and infill developments near focus areas, major travel corridors, and public transportation options. These policies aim to reduce reliance on single-occupancy vehicles and reduce VMT while accommodating new growth in the City.

The GPU would also implement policies that support sustainable practices for new developments and maintenance of the city. These policies would promote development of sustainable infrastructure for transportation (conservation element, policy 1.12), energy generation in public facilities (conservation element, policy 3.9), irrigation systems (conservation element, policy 4.4), and water facilities (public services element, policies 3.5 and 3.12). Policies from the circulation element focus on sustainable practices in transportation (circulation element, policies 1.7, 1.8, 4.9, 5.4, 5.6, and 5.9). Policies from the land use and urban design elements focus on encouraging sustainable land use strategies and practices, such as natural resource capture, sustainable electric power, and passive climate control (land use element, policies 4.3 and 4.4 and urban design element, policy 2.11). Policies 1.4, 3.3, 3.8, and 3.10 of the conservation element, policy 1.7 of the public services element, and policy 2.11 of the urban design element would all promote energy-efficient development patterns in building design, construction, and maintenance. These policies would encourage reduction in energy consumption as well as less reliance on nonrenewable energy and would support the development and use of renewable energy sources. Thus, implementation of the GPU would contribute to the reduction of GHG emissions throughout the city, as seen in Table 5.7-6, would not interfere with the goals and measures of the City's CAP, and no impact would occur.

Level of Significance Before Mitigation: Because implementation of RR GHG-1 through RR GHG-7 and Circulation Policies 1.7, 1.8, 3.4, 3.7, 4.3, 4.9, 5.4, 5.6, and 5.9; Conservation Policies 1.4, 1.7, 1.8, 1.9, 1.10, 1.12, 1.14, 3.3, 3.8, 3.9, 3.10, 3.11, 4.4; Land Use Policies 1.6, 1.7, 2.5, 2.10, 4.3, 4.4, and 4.5; Open Space Policies 1.6, Public Services Policies 1.7, 3.5, and 3.12, Urban Design Policy 2.11 would contribute to the reduction of GHG emissions in the City, Impact 5.7-2 will be less than significant.

5.7.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impact would be less than significant: 5.7-2.

Without mitigation, the following impact would be **potentially significant**:

- **Impact 5.7-1** Implementation of the proposed General Plan Update would result in a decrease in GHG emissions in horizon year 2045 from existing baseline but may not meet the long-term GHG reduction goal under Executive Order S-03-05.

5.7.7 Mitigation Measures

Impact 5.7-1

GHG-1 The City of Santa Ana shall update the Climate Action Plan (CAP) every five years to ensure the City is monitoring the plan's progress toward achieving the City's greenhouse gas (GHG) reduction target and to require amendment if the plan is not achieving the specified level. The update shall consider a trajectory consistent with the GHG emissions reduction goal established under Executive Order S-03-05 for year 2050 and the latest applicable statewide legislative GHG emission reduction that may be in effect at the time of the CAP update (e.g., Senate Bill 32 for year 2030). The CAP update shall include the following:

- GHG inventories of existing and forecast year GHG levels.
- Tools and strategies for reducing GHG emissions to ensure a trajectory with the long-term GHG reduction goal of Executive Order S-03-05.
- Plan implementation guidance that includes, at minimum, the following components consistent with the proposed CAP:
  - Administration and Staffing
  - Finance and Budgeting
  - Timelines for Measure Implementation
  - Community Outreach and Education
  - Monitoring, Reporting, and Adaptive Management
  - Tracking Tools

5.7.8 Level of Significance After Mitigation

Impact 5.7-1

Implementation of Mitigation Measure GHG-1 would ensure that the City is tracking and monitoring the City's GHG emissions in order to chart a trajectory to achieve the long-term year 2050 GHG reduction goal set by Executive Order S-03-05. However, at this time, there is no plan past 2030 that achieves the long-term GHG reduction goal established under Executive Order S-03-05. As identified by the California Council on Science and Technology, the state cannot meet the 2050 goal without major advancements in technology (CCST 2012). Advancement in technology in the future could provide additional reductions to allow the state and City to meet the 2050 goal; however, no additional statewide measures are currently available. Therefore, Impact 5.7-1 would be **significant and unavoidable**.

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5.8 HAZARDS AND HAZARDOUS MATERIALS

This section evaluates the potential impacts of buildout of the Santa Ana General Plan update (GPU) on human health and the environment due to exposure to hazardous materials or conditions associated with the city and its sphere of influence (plan area). Potential impacts and appropriate mitigation measures are included as necessary.

5.8.1 Environmental Setting

5.8.1.1 REGULATORY BACKGROUND

Hazardous Materials and Waste

Hazardous materials refer generally to hazardous substances that exhibit corrosive, poisonous, flammable, and/or reactive properties and have the potential to harm human health and/or the environment. Hazardous materials are used in products (household cleaners, industrial solvents, paint, pesticides, etc.) and in the manufacturing of products (e.g., electronics, newspapers, plastic products). Hazardous materials can include petroleum, natural gas, synthetic gas, acutely toxic chemicals, and other toxic chemicals that are used in agriculture, commercial, and industrial uses; businesses; hospitals; and households. Accidental releases of hazardous materials can happen from a variety of causes, including highway incidents, warehouse fires, train derailments, shipping accidents, and industrial incidents.

There are many federal, state, and local programs that regulate the use, storage, and transportation of hazardous materials and hazardous waste, and they are constantly changing. Federal and state statutes as well as local ordinances and plans regulate hazardous waste management. These regulations can reduce the danger that hazardous substances pose to people and businesses under normal daily circumstances and as a result of emergencies and disasters.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) of 1976 is the principal federal law that regulates the generation, management, and transportation of waste. Hazardous waste management includes the treatment, storage, or disposal of hazardous waste. Treatment is any process that changes the physical, chemical, or biological character of the waste to reduce its potential as an environmental threat. Treatment can include neutralizing the waste, recovering energy or material resources from the waste, rendering the waste less hazardous, or making the waste safer to transport, dispose of, or store.

The RCRA gave the US Environmental Protection Agency (EPA) the authority to control hazardous waste from "cradle to grave," that is, from generation to transportation, treatment, storage, and disposal. The RCRA also sets up a framework for the management of nonhazardous wastes. The 1986 amendments to RCRA enabled the EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. It should be noted that RCRA focuses only on active and future facilities and does not address abandoned or historical sites. The federal Hazardous and Solid Waste Amendments are the 1984 amendments to RCRA that required phasing out land disposal of hazardous waste. Some of the other mandates

of this strict law include increased enforcement authority for the EPA, more stringent hazardous waste management standards, and a comprehensive underground storage tank program.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) is a law developed to protect the water, air, and soil resources from the risks created by past chemical disposal practices. This law is also referred to as the Superfund Act and regulates sites on the National Priority List, which are called Superfund sites. This law provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment (US Code Title 42, Chapter 103). CERCLA establishes requirements concerning closed and abandoned hazardous waste sites; provides for liability of persons responsible for releases of hazardous waste at these sites; and establishes a trust fund to provide for cleanup when no responsible party can be identified.

Superfund Amendments and Reauthorization Act

The Superfund Amendments and Reauthorization Act (SARA) reauthorized CERCLA to continue cleanup activities around the country. Several site-specific amendments, clarifications, and technical requirements were added to the legislation, including additional enforcement authorities. Title III of SARA also authorized the Emergency Planning and Community Right-to-Know Act.

Emergency Planning and Community Right to Know Act

The Emergency Planning and Community Right to Know Act (EPCRA) was enacted by Congress as the national legislation on community safety. The act required the establishment of state commissions, planning districts, and local committees to facilitate the preparation and implementation of emergency plan. Under its requirements, local emergency planning committees (LEPC) are responsible for developing a plan for preparing for and responding to a chemical emergency, including:

- An identification of local facilities and transportation routes where hazardous materials are present.
- The procedures for immediate response in case of an accident (this must include a community-wide evacuation plan).
- A plan for notifying the community that an incident has occurred.
- The names of response coordinators at local facilities.
- A plan for conducting drills to test the plan.

The emergency plan is reviewed by the State Emergency Response Commission and publicized throughout the community. The LEPC is required to review, test, and update the plan each year. The Orange County Health Care Agency, Environmental Health Division (OCHCA) is responsible for coordinating hazardous material and disaster preparedness planning and appropriate response efforts with city departments and local and state

agencies. The goal is to improve public and private sector readiness and to mitigate local impacts resulting from natural or man-made emergencies.

Another purpose of the EPCRA is to inform communities and citizens of chemical hazards in their areas. Sections 311 and 312 of EPCRA require businesses to report to state and local agencies the location and quantities of chemicals stored on-site. Under section 313 of EPCRA, manufacturers are required to report chemical releases for more than 600 designated chemicals. In addition to chemical releases, regulated facilities are also required to report off-site transfers of waste for treatment or disposal at separate facilities, pollution prevention measures, and chemical recycling activities. The EPA maintains the Toxic Release Inventory database that documents the information that regulated facilities are required to report annually.

Toxic Substances Control Act

The Toxic Substances Control Act of 1976 was enacted by Congress to give the EPA the ability to track the 75,000 industrial chemicals currently produced or imported into the United States. The EPA repeatedly screens these chemicals and can require reporting or testing of any that may pose an environmental or human health hazard. It can ban the manufacture and import of chemicals that pose an unreasonable risk. Also, the EPA has mechanisms in place to track the thousands of new chemicals that industry develops each year with either unknown or dangerous characteristics. It then can control these chemicals as necessary to protect human health and the environment. The act supplements other federal statutes, including the Clean Air Act and the Toxic Release Inventory under EPCRA.

Hazardous Materials in Structures: Asbestos-Containing Materials and Lead-Based Paint

Several regulations and guidelines pertain to abatement of and protection from exposure to asbestos-containing materials (ACM) and lead-based paint (LBP), including Construction Safety Orders 1529 (pertaining to ACM) and Section 1532.1 (pertaining to LBP) from Title 8 of the California Code of Regulations, and Part 61, Subpart M, of the Code of Federal Regulations (pertaining to ACM). In California, ACM and LBP abatement must be performed and monitored by contractors with appropriate certification from the California Department of Health Services. Asbestos is also regulated as a hazardous air pollutant under the Clean Air Act and a potential worker safety hazard under the authority of Cal/OSHA.

Requirements for limiting asbestos emissions from building demolition and renovation are specified in the South Coast Air Quality Management District's Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities). California Government Code Sections 1529 and 1532.1 provide for exposure limits, exposure monitoring, respiratory protection, and good working practice by workers exposed to lead and ACMs.

Business Plan Act

Both the federal government[1] and the State of California[2] require all businesses that handle more than a specified amount of hazardous materials or extremely hazardous materials—termed a reporting quantity—to submit a hazardous materials business plan to the local certified Unified Program agency (CUPA).

A Business Plan must be submitted by businesses that handle a hazardous material or a mixture containing a hazardous material in quantities equal to or greater than:

- 500 pounds of a solid
- 55 gallons of a liquid
- 200 cubic feet of a compressed gas at standard temperature and pressure
- The federal Threshold Planning Quantity for Extremely Hazardous Substances
- Radioactive materials in quantities for which an emergency plan is required per Parts 30, 40, or 70 of the Code of Federal Regulations, Title 10, Chapter 1

The Business Plan must include the type and quantity of hazardous materials, a site map, risks of using these materials, spill prevention, emergency response, employee training, and emergency contacts.

Hazardous Materials Transportation

Section 31303 of the California Vehicle Code and the US Department of Transportation regulate hazardous materials transport. The California Highway Patrol and California Department of Transportation are the enforcement agencies. The California Office of Emergency Services provides emergency response services involving hazardous materials incidents.

Hazardous Materials Incident Response

Under Title III of SARA, the LEPC is responsible for developing an emergency plan for preparing for and responding to chemical emergencies. This emergency plan must include:

- An identification of local facilities and transportation routes where hazardous materials are present.
- The procedures for immediate response in case of an accident (this must include a community-wide evacuation plan).
- A plan for notifying the community that an incident has occurred.
- The names of response coordinators at local facilities.
- A plan for conducting exercises to test the plan.

[1] Code of Federal Regulations, EPA, SARA, and Title III.
[2] California State Health and Safety Code, Division 20, Chapter 6.95, §§ 25500–25520; California Code of Regulations, Title 19, Chapter 2, Sub-chapter 3, Article 4, §§ 2729–2734.

The plan is reviewed by the state emergency response commission (SERC) and publicized throughout the community. The LEPC is required to review, test, and update the plan each year. The OCHCA is responsible for coordinating hazardous material coordination and inspection in Santa Ana.

Hazardous Material Spill/Release Notification Guidance

All significant spills, releases, or threatened releases of hazardous materials must be immediately reported. Federal and state emergency notification is required for all significant releases of hazardous materials. Requirements for immediate notification of all significant spills or threatened releases cover owners, operators, persons in charge, and employers. Notification is required regarding significant releases from facilities, vehicles, vessels, pipelines, and railroads. Many state statutes require emergency notification of a hazardous chemical release:

- Health and Safety Codes Sections 25270.7, 25270.8, and 25507
- Vehicle Code Section 23112.5
- Public Utilities Code Section 7673, (PUC General Orders #22-B, 161)
- Government Code Sections 51018, 8670.25.5 (a)
- Water Code Sections 13271, 13272
- California Labor Code Section 6409.1 (b)10

In addition, all releases that result in injuries or workers harmfully exposed must be immediately reported to California Occupational Safety and Health Administration (California Labor Code Section 6409.1 [b]). For additional reporting requirements, also refer to the Safe Drinking Water and Toxic Enforcement Act of 1986, better known as Proposition 65, and Section 9030 of the California Labor Code.

The California Accidental Release Prevention (CalARP) program became effective on January 1, 1997, in response to Senate Bill 1889. CalARP replaced the California Risk Management and Prevention Program. Under the CalARP, the Governor's Office of Emergency Services must adopt implementing regulations and seek delegation of the program from the EPA. CalARP aims to be proactive and therefore requires businesses to prepare risk management plans, which are detailed engineering analyses of the potential accident factors present at a business, and the mitigation measures that can be implemented to reduce this accident potential. In most cases, local governments have the lead role for working directly with businesses in this program. The OCHCA is the CUPA designated as the administering agency for CalARP.

Responsible agencies that regulate hazardous materials and waste include:

United States EPA. The EPA is the primary federal agency that regulates hazardous materials and waste. In general, the EPA works to develop and enforce regulations that implement environmental laws enacted by Congress. The agency is responsible for researching and setting national standards for a variety of environmental programs, and delegates to states and tribes the responsibility for issuing permits and for monitoring and enforcing compliance. EPA programs promote handling hazardous wastes safely, cleaning up contaminated land, and reducing trash. Under the authority of the RCRA and in cooperation with state and tribal partners, the Waste Management Division manages a hazardous waste program, an underground storage tank program, and a solid waste program that includes development of waste reduction strategies such as recycling.

California EPA. CalEPA was created in 1991 by Governor's Executive Order. Six boards, departments, and an office were placed under the CalEPA umbrella to create a cabinet-level voice for the protection of human health and the environment and to ensure the coordinated deployment of state resources. CalEPA oversees hazardous materials and hazardous waste compliance throughout California.

California Department of Toxic Substances Control. The DTSC is a department of CalEPA, which authorizes DTSC to carry out the RCRA program in California to protect people from exposure to hazardous wastes. The department regulates hazardous waste, cleans up existing contamination, and looks for ways to control and reduce the hazardous waste produced in California primarily under the authority of RCRA and in accordance with the California Hazardous Waste Control Law (California Health and Safety Code Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (Title 22, California Code of Regulations, Divisions 4 and 4.5). Permitting, inspection, compliance, and corrective action programs ensure that people who manage hazardous waste follow state and federal requirements and other laws that affect hazardous waste specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning. DTSC also maintains a Site Mitigation and Brownfields Reuse Program Database.

Under the DTSC, the Statewide Compliance Division (SCD) administers the technical implementation of the state's Unified Program, a consolidation of six environmental programs at the local level. This program was established under the amendments to the California Health and Safety Code made by Senate Bill 1082 in 1994. The six programs that make up the Unified Program are:

- Hazardous Materials Business Plan/Emergency Response Plan
- Hazardous Waste/Tiered Permitting
- Underground Storage Tanks
- Aboveground Storage Tanks Spill Prevention Control and Countermeasures
- California Accidental Release Prevention Program (CalARP)
- Uniform Fire Code Hazardous Materials Management Plan

The SCD also conducts triennial reviews of Unified Program agencies to ensure their programs are consistent statewide, conform to standards, and deliver quality environmental protection at the local level. SCD also carries out the inspections, enforcement, and complaint response at the state's hazardous waste generators, facilities, and transporters and oversees the hazardous waste generator and on-site waste treatment surveillance and enforcement program carried out by local Unified Programs.

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

The Unified Program is related to the SERC and LEPCs that were established under both federal (EPCRA) and state authority relative to the Hazardous Materials Business Plan/Emergency Response Plan. While the CUPA structure does not specifically incorporate the SERC and LEPCs, both SERC and CUPA have found it beneficial

to establish strong communication and coordination on hazardous materials issues. The CUPA board now has a representative on the SERC, and members of LEPCs are also CUPA board members. Common issues include ensuring that hazardous materials, waste, and tank programs maintain strong coordination and communication for maximum consistency in program implementation. Shared data, joint resources, common forms, provision of emergency information, and regulatory review are other interests that are coordinated by the CUPA Board and SERC/LEPCs.

The OCHCA is designated by the state as the CUPA for the County of Orange. The OCHCA focuses on the management of specific environmental programs at the local government level to address the disposal, handling, processing, storage, and treatment of local hazardous materials and waste products. The CUPAs are also responsible for implementing the leak prevention element of the Underground Storage Tank (UST) Program.

Programs that regulate hazardous materials and waste include:

UST Program. Releases of petroleum and other products from USTs are the leading source of groundwater contamination in the United States. The RCRA Subtitle I established regulations governing the storage of petroleum products and hazardous substances in USTs and the prevention and cleanup of leaks. In EPA Region 9 (California, Arizona, Hawaii, Nevada, Pacific Islands, and over 140 tribal nations) the UST program operates primarily through state agency programs with EPA oversight. In California, the State Water Resources Control Board (SWRCB), under the umbrella of CalEPA, provides assistance to local agencies enforcing UST requirements. The purpose of the UST program is to protect public health and safety and the environment from releases of petroleum and other hazardous substances. The program consists of four elements: leak prevention, cleanup, enforcement, and tank tester licensing. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for groundwater cleanup programs, including groundwater analytical data, the surveyed locations of monitoring wells, and other data. The SWRCB's Geotracker system currently has information submitted by responsible parties for over 10,000 leaking UST (LUST) sites statewide and has been extended to include all SWRCB groundwater cleanup programs, including the LUST, non-LUST (Spill, Leaks, Investigation, and Cleanup), Department of Defense, and landfill programs.

The OCHCA is charged with the responsibility of conducting compliance inspections of regulated facilities in Orange County. Regulated facilities are those that handle hazardous materials, generate or treat hazardous waste, and/or operate an underground storage tank. All new installations of underground storage tanks require an inspection, along with the removal of the old tanks under strict chain-of-custody protocol.

Hazardous Waste Management. OCHCA implements the Hazardous Waste Generator Program and the Hazardous Waste Treatment/Tiered Permit Program throughout Orange County. The purpose of these programs is to ensure that all hazardous waste generated in Orange County businesses are properly handled, recycled, treated, stored and disposed. Environmental Health staff in these programs inspects facilities that generate hazardous waste, investigate reports of illegal hazardous waste disposal, and respond to emergency spills of hazardous chemicals. Environmental Health staff also participates in public education programs designed to inform industries and residents about the laws and regulations relating to safe disposal of hazardous waste.

Airports

Airport authorities and other agencies regulate aircraft activity. The City has no direct authority over airport development and operations. The State Aeronautics Act of the California Public Utilities Code (Sections 21001 et seq.) establishes statewide requirements for the airport land use compatibility planning and requires nearly every county to create an Airport Land Use Commission (ALUC) or other alternative. The Orange County ALUC is responsible for airport land use planning in the county.

Federal Aviation Administration

The basic responsibilities of the Federal Aviation Administration (FAA), under the US Department of Transportation, are the regulation of civil aviation to promote safety, airspace and air traffic management, and the regulation of commercial space transportation. The Code of Federal Regulations contains standards for aircraft noise emission levels and for protecting navigable airspace near airports from intrusion by structures.

John Wayne Airport Environs Land Use Plan

The California ALUC Planning Handbook provides planning guidance to ALUCs and counties and cities with jurisdiction over airport area land uses. The purpose of the handbook is to support the State Aeronautics Act. The handbook allows jurisdictions flexibility in determining air safety zones that represent areas of assumed accident potential. To fulfill their purpose, ALUCs have two specific duties according to the Handbook:

- Prepare Compatibility Plans—Each commission is required to "prepare and adopt" an airport land use plan for each of the airports within its jurisdiction (Section 21674 (c) and 21675(a)).
- Review Local Agency Land Use Actions and Airport Plans—The commissions' second duty is to "review the plans, regulations, and other actions of local agencies and airport operators…." (Section 21674(d))

The Orange County ALUC has adopted an airport environs land use plan (AELUP) for John Wayne Airport. The 2008 AELUP intends, for the 20-year planning future for John Wayne Airport, to safeguard the general welfare of the inhabitants within the vicinity of the airport and to ensure the continued operation of the airport. Specifically, the plan seeks to protect the public from the adverse effects of aircraft noise, to ensure that people and facilities are not concentrated in areas susceptible to aircraft accidents, and to ensure that no structures or activities adversely affect navigable airspace. The implementation of the plan forestalls urban encroachment on the airport (ALUC 2008). The compatibility plan for John Wayne Airport affects the City of Santa Ana, and building height restrictions specified in the AELUP apply in the city. The AELUP requirements for building heights are:

a) Buildings and structures shall not penetrate Federal Aviation Regulation (FAR) Part 77, Obstruction—Imaginary Surfaces, for John Wayne Airport unless approved by the Airport Land Use Commission (ALUC).

b) In compliance with FAR Part 77, applicants proposing buildings or structures that penetrate the 100:1 Notification Surface shall file a Form 7460-1, Notice of Proposed Construction or Alteration with the FAA. A copy of the FAA application shall be submitted to the ALUC and the applicant shall provide the City with FAA and ALUC responses.

c) Development projects that include structures higher than two hundred (200) feet above existing grade shall be submitted to the ALUC for review. In addition, projects that exceed a height of two hundred (200) feet above existing grade shall file Form 7460-1 with the Federal Aviation Administration (FAA).

Table 5.8-1 below depicts land use compatibility from the AELUP which breaks out areas into safety zones.

Table 5.8-1 Land Use Compatibility: John Wayne Airport Safety Zones

Safety Zone	Land Use Compatibility
1	• Airport ownership of property encouraged • Prohibit all new structures • Prohibit residential land uses • Avoid nonresidential uses except if very low intensity in character and confined to the sides and outer end of the area
2	• Prohibit residential uses except on large, agricultural parcels • Limit nonresidential uses to activities which attract few people (uses such as shopping centers, most eating establishments, theaters, meeting halls, multi-story office buildings, and labor-intensive manufacturing plants unacceptable) • Prohibit children's schools, day care centers, hospitals, nursing homes • Prohibit hazardous uses (e.g. aboveground bulk fuel storage)
3	• Limit residential uses to very low densities (if not deemed unacceptable because of noise) • Avoid nonresidential uses having moderate or higher usage intensities (e.g., major shopping centers, fast food restaurants, theaters, meeting halls, buildings with more than three aboveground habitable floors are generally unacceptable) • Prohibit children's schools, large day care centers, hospitals, nursing homes
4	• In undeveloped areas, limit residential uses to very low densities (if not deemed unacceptable because of noise); if alter- native uses are impractical, allow higher densities as infill in urban areas • Limit nonresidential uses as in Zone 3 • Prohibit children's schools, large day care centers, hospitals, nursing homes
5	• Avoid residential uses unless airport related (noise usually also a factor) • Allow all common aviation-related activities provided that height-limit criteria are met • Limit other nonresidential uses similarly to Zone 3, but with slightly higher usage intensities • Prohibit children's schools, large day care centers, hospitals, nursing homes
6	• Allow residential uses • Allow most nonresidential uses; prohibit outdoor stadiums and similar uses with very high intensities • Avoid children's schools, large day care centers, hospitals, nursing homes

Source: ALUC 2008.

Emergency Preparedness

Emergency Management is part of the Santa Ana Police Department's Homeland Security Division and works with all City departments, Orange County Fire Authority, Orange County's Emergency Management Division, Santa Ana Unified School District, the American Red Cross, other county departments and agencies, and surrounding cities to provide emergency preparedness and coordination when man-made and natural disasters occur.

The City of Santa Ana has prepared a draft emergency operations plan to ensure the most effective allocation of resources for the maximum benefit and protection of the civilian population in time of emergency. The objective of the draft emergency operations plan is to incorporate and coordinate all available City resources into an efficient organization capable of responding to any emergency. While no plan can completely prevent death and destruction, good plans carried out by knowledgeable and well-trained personnel will minimize losses. This plan establishes the emergency organization and assigns tasks and general procedures. It provides for coordination of planning efforts of the various emergency staff and service elements using the Standardized Emergency Management System and National Incident Management System with all levels of government.

The City of Santa Ana has a natural hazards mitigation plan (NHMP). The NHMP includes resources and information to assist city residents, public- and private-sector organizations, and others interested in participating in planning for natural hazards. The NHMP provides a list of activities that may help Santa Ana reduce risk and prevent loss from future natural hazard events. The NHMP identifies three primary hazard risk areas—earthquakes, flooding, and wind storms.

5.8.1.2 EXISTING CONDITIONS

Hazardous Materials Sites

Three environmental databases were searched for listings in the City of Santa Ana on January 14, 2019—GeoTracker, maintained by the State Water Resources Control Board; EnviroStor, maintained by the Department of Toxic Substances Control; and RCRAInfo, maintained by the EPA. Findings of the database searches are presented in Tables 5.8-2, 5.8-3, and 5.8-4.

Table 5.8-2 GeoTracker Sites in Santa Ana

Type of Site	Status	Number of Sites
Leaking Underground Storage Tank (LUST)	Completed – Case Closed	215
	Open – Eligible For Closure	5
	Open - Remediation	15
	Open – Site Assessment	8
	Open – Verification Monitoring	6
	Open – Assessment and interim Remedial Action	1
	Open – Inactive	1
	Subtotal, Open Cases	**36**
	Total	**251**
Cleanup Program Site	Completed– Case Closed	22
	Open – Remediation	13
	Open – Verification Monitoring	1
	Open – Inactive	6
	Open – Site Assessment	13
	Open – Eligible for Closure	1
	Open – Assessment and interim Remedial Action	1
	Subtotal, Open Cases	**35**
	Total	**57**
Permitted Underground Storage Tanks	NA	**74**
	Total	**382**

Source: SWRCB 2019
Note: NA = Not Applicable

Table 5.8-3 EnviroStor Sites in Santa Ana

Type of Site	Status	Number of Sites
Corrective Action Sites	Active	4
	Refer: RWQCB	1
	Refer: SMBRP	1
	No Further Action	3
	Inactive – Needs Evaluation	1
	Total	**10**
Evaluation Sites	Refer: RWQCB	11
	Refer: 1248 Local Agency	14
	Inactive – Needs Evaluation	2
	No Action Required	2
	Total	**29**
Military Evaluation Sites	Inactive - Needs Evaluation	7
	Active	1
	Total	**8**
Tiered Permit	Active	2
	Certified O&M - Land Use Restrictions Only	1
	Inactive - Needs Evaluation	30
	No Action Required	10
	Refer: Local Agency	3
	Refer: Other Agency	2
	Total	**48**
State Response	Refer: RWQCB	1
	No Further Action	1
	Certified	1
	Active	4
	Total	**7**
Permits	Non-Operating	9
	Operating	1
	Total	**10**
School Investigation	Inactive - Needs Evaluation	5
	Inactive - Needs Evaluation	9
	Total	**14**
School Cleanup	Certified	3
	Inactive - Needs Evaluation	1
	Total	**4**
	Total	**130**

Source: DTSC 2019.

Table 5.8-4 RCRA Info Sites in Santa Ana

Facility Name	Number of Sites
Transporter	123
Large Quantity Generators	18
Small Quantity Generators	110
Conditionally Exempt Small Quantity Generators	2
Permitted Wastewater Discharging Facilities	172
Toxics Release Inventory (TRI)	101
Total	**526**

Source: USEPA 2019a, 2019b.
Large Quantity Generator (LQG): generates over 1,000 kg (2,205 pounds) of hazardous waste, or 1 kg (2.2 pounds) of acutely hazardous waste during any month within the year.
Small Quantity Generator (SQG): generates 100 to 1,000 kg (220.5 to 2,205 pounds) of hazardous waste per month.

Asbestos

Asbestos is the name of a group of silicate minerals that are heat resistant and thus were commonly used as insulation and fire retardant. Inhaling asbestos fibers has been shown to cause lung disease (asbestosis) and lung cancer (mesothelioma). Beginning in the early 1970s, a series of bans was established by the EPA and the Consumer Product Safety Commission on the use of certain asbestos-containing materials in construction. Most US manufacturers voluntarily discontinued the use of asbestos in certain building products during the 1980s. Requirements for limiting asbestos emissions from building demolition and renovation activities are specified in South Coast AQMD Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities).

Lead

Lead was formerly used as an ingredient in paint (before 1978) and as a gasoline additive; both of these uses have been banned. Lead is listed as a reproductive toxin and a cancer-causing substance; it also impairs the development of the nervous system and blood cells in children. Those demolishing pre-1978 structures may presume the buildings contain lead-based paint (LBP) without having an inspection for LBP. Lead must be contained during demolition activities (California Health & Safety Code sections 17920.10 and 105255).

Groundwater Plume

The south basin area includes a plume originating from more than 20 industrial locations located in Santa Ana, Irvine, and Tustin. The plume is bounded by Edinger Avenue, Main Street, the I-405 Freeway, Red Hill, and Von Karman. The contaminants of concern include volatile organic compounds (VOCs) and perchlorate. The uncontrolled plume occurs predominately in the shallow aquifer at 100-foot depth which flows into a deeper principal aquifer, bringing VOC contaminants with it. So far, contaminants have arrived in two municipal drinking water wells (OCWD 2018). OCWD is embarking on a comprehensive plan to control the spread and eventually remove these chemicals that have migrated beyond their original pollution sources. Regulatory oversight is provided by the DTSC and the Regional Water Quality Control Board. These two state agencies are working closely with OCWD and some cooperative potentially responsible parties to map the occurrence of the

contaminants, identify appropriate remedies and implement groundwater cleanup (OCWD 2020a). As a component of the remedial plan, OCWD's consultant performed an assessment of the risk to human health and the environment associated with contaminated groundwater in the south basin area (OCWD 2020b).

Airport-Related Hazards

The John Wayne Airport (JWA) is outside of the city's southeast boundary (see Figure 3-2, *Citywide Aerial*). JWA is an international, commercial service airport owned and operated by the County of Orange. The service area includes more than three million people in 34 cities and unincorporated areas of Orange County.

In 2018, there were 204,561 civil takeoffs or landings and 706 military takeoffs or landings, for a total of 205,267 takeoffs or landings (FAA 2012).[3]

The John Wayne Airport Compatibility Land Use Plan (ACLUP) was issued by the Orange County Airport Commission in 2008. Parts of the city are within Safety Compatibility Zones for JWA, and parts of the city are in areas where heights of structures are limited pursuant to FAA Part 77 Regulations protecting airspace near the airport (Santa Ana 2009).

Safety Compatibility Zones

Zone 6, the Traffic Pattern Zone for JWA, extends over the southeast corner of the city (see Figure 5.8-1, *John Wayne Airport Safety Compatibility Zones*). Zone 6 allows for all residential uses and most nonresidential uses. Outdoor stadiums and similar uses with high intensities are not allowed. Additionally, children's schools, large day-care centers, hospitals, and nursing homes are to be avoided (ALUC 2008).

Height Limits

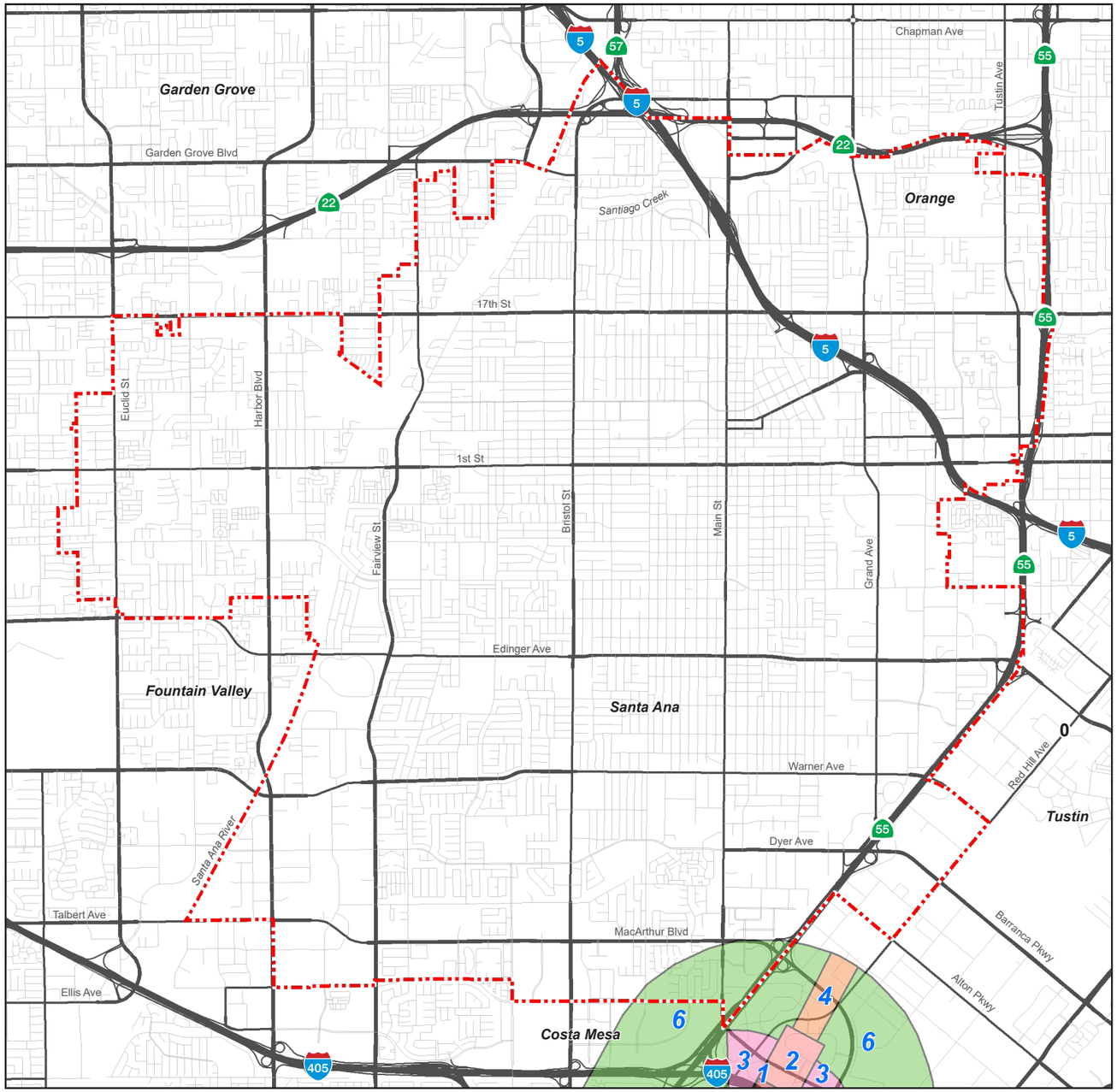
Most of the southeast parts of the city are in areas where heights of structures are regulated to avoid obstructions to aircraft under FAA Part 77 regulations (see Figure 5.8-2, *Height Restrictions per Federal Air Regulations Part 77*). For these areas, the regulation requires that notice be given to the FAA by a person proposing to construct a structure that would exceed specified heights and/or would be erected at specified sites. Notification requirements are described under Section 5.8.1.1, *Regulatory Background*.

Heliports

Heliports are only allowed outside of residential zoning districts with a Conditional Use Permit pursuant to Section 41-621 of the Santa Ana Municipal Code. In addition, any proposed heliports shall undergo review from ALUC, obtain an Airspace Analysis from the FAA as specified in Section 2.1.5 of the AELUP and confirm consistency with the AELUP prior to construction as specified in Section 4.7 of the AELUP.

[3] "Itinerant" takeoffs or landings where the aircraft arrives from, or departs to, outside the airport area. Does not include practice flights limited to within 20 miles of the airport.

Figure 5.8-1 - John Wayne Airport Safety Compatability Zones



City of Santa Ana

John Wayne Airport Safety Zones

- Zone 1: Runway Protection Zone
- Zone 2: Inner Approach/Departure Zone
- Zone 3: Inner Turning Zone
- Zone 4: Outer Approach/Departure Zone
- Zone 5: Sideline Zone (Not Shown - Out of Map Range)
- Zone 6: Traffic Pattern Zone

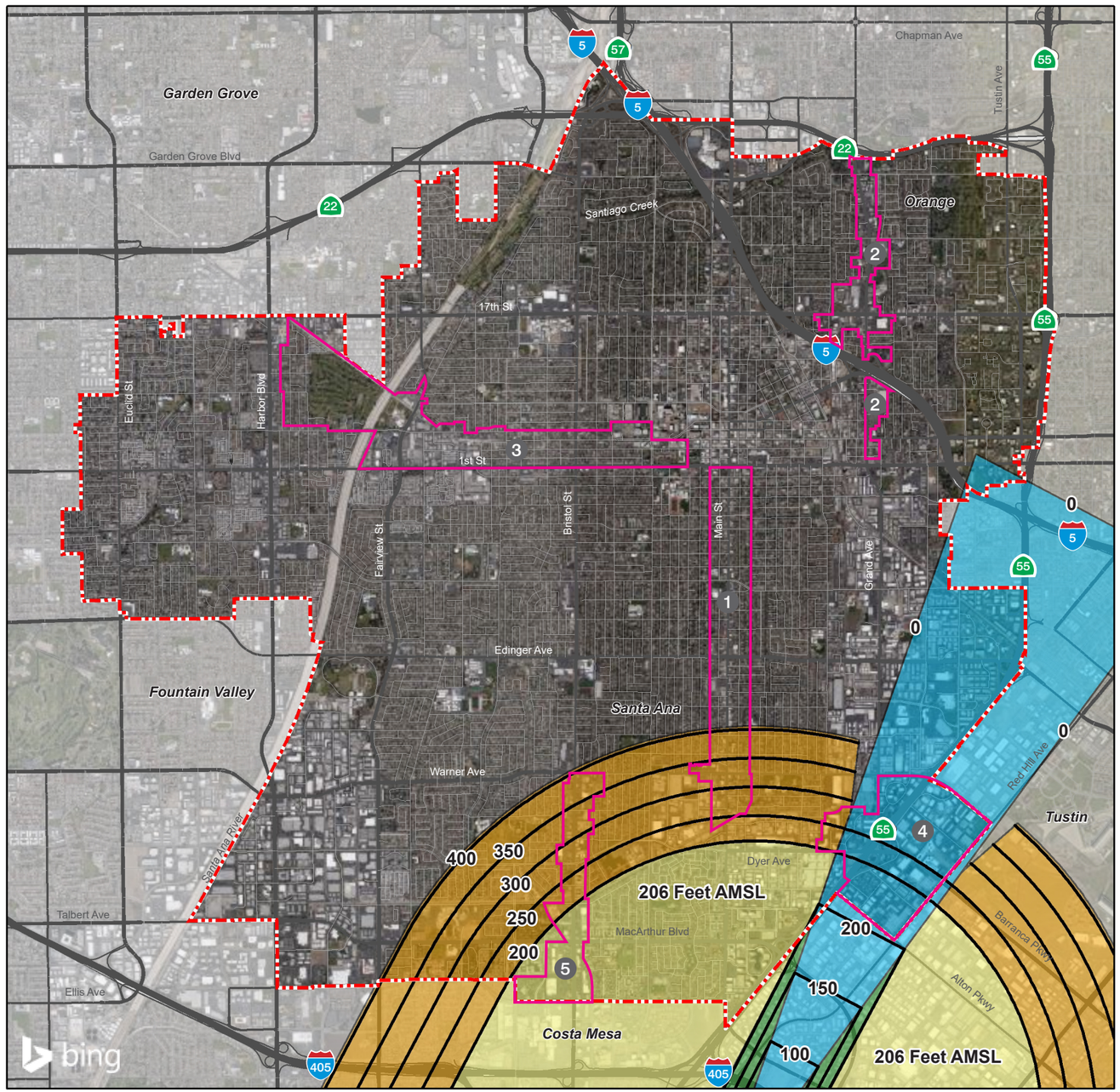
0 1
Scale (Miles)

Source: Orange County Airport Land Use Commission Airport Environs Land Use Plan for John Wayne Airport, 2008

5. Environmental Analysis
HAZARDS AND HAZARDOUS MATERIALS

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Figure 5.8-2 - Height Restrictions per Federal Air Regulations Part 77



City of Santa Ana

Elevation Contours in feet above mean sea level (AMSL)

Airport Surfaces

- Horizontal Surface - Elevation 206 Feet AMSL
- Departure Surface - Slope 50:1 (Horizontal:Vertical)
- Transitional Surface - Slope 7:1 (Horizontal:Vertical)
- Conical Surface - Slope 20:1 (Horizontal:Vertical)
- Runway - Elevation 54 Feet AMSL

Focus Areas

1. South Main Street
2. Grand Ave/17th Street
3. West Santa Ana Boulevard
4. 55 Fry/Dyer Road
5. South Bristol Street

0 1
Scale (Miles)

Source: Orange County Airport Land Use Commission Airport Environs Land Use Plan for John Wayne Airport, 2008

5. Environmental Analysis
HAZARDS AND HAZARDOUS MATERIALS

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5.8.2 Thresholds of Significance

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

H-1 Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

H-2 Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

H-3 Emit hazardous emissions or handle hazardous or acutely hazardous materials, substance, or waste within one-quarter mile of an existing or proposed school.

H-4 Be located on a site which is included on a list of hazardous materials compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.

H-5 For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would result in a safety hazard or excessive noise for people residing or working in the project area.

H-6 Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

H-7 Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

5.8.3 Regulatory Requirements and General Plan Policies

5.8.3.1 REGULATORY REQUIREMENTS

RR HAZ-1 Hazardous materials and hazardous wastes will be transported to and/or from projects developed under the General Plan Update in compliance with any applicable state and federal requirements, including the U.S. Department of Transportation regulations listed in the Code of Federal Regulations (Title 49, Hazardous Materials Transportation Act); California Department of Transportation standards; and the California Occupational Safety and Health Administration standards.

RR HAZ-2 Hazardous waste generation, transportation, treatment, storage, and disposal will be conducted in compliance with Subtitle C of the Resource Conservation and Recovery Act (Code of Federal Regulations, Title 40, Part 263), including the management of nonhazardous solid wastes and underground tanks storing petroleum and other hazardous substances. The projects developed under the General Plan Update will be designed and constructed in accordance with the

regulations of the Orange County Health Care Agency, Environmental Health Division , which serves as the designated Certified Unified Program Agency.

RR HAZ-3 Underground storage tank (UST) repairs and/or removals will be conducted in accordance with the California UST Regulations (Title 23, Chapter 16 of the California Code of Regulations). Any unauthorized release of hazardous materials will require release reporting, initial abatement, and corrective actions that will be completed with oversight from the Regional Water Quality Control Board, Department of Toxic Substances Control, Orange County Health Care Agency Environmental Health Division , South Coast Air Quality Management District, and/or other regulatory agencies, as necessary. Use of existing USTs will also have to be conducted (i.e., used, maintained and monitored) in accordance with the California UST Regulations (Title 23, Chapter 16 of the California Code of Regulations).

RR HAZ-4 Demolition activities that have the potential to expose construction workers and/or the public to asbestos-containing materials or lead-based paint will be conducted in accordance with applicable regulations, including, but not limited to:

- South Coast Air Quality Management District's Rule 1403
- California Health and Safety Code (Section 39650 et seq.)
- California Code of Regulations (Title 8, Section 1529)
- California Occupational Safety and Health Administration regulations (California Code of Regulations, Title 8, Section 1529 [Asbestos] and Section 1532.1 [Lead])
- Code of Federal Regulations (Title 40, Part 61 [asbestos], Title 40, Part 763 [asbestos], and Title 29, Part 1926 [asbestos and lead])

RR HAZ-5 The removal of hazardous materials, such as polychlorinated biphenyls (PCBs), mercury-containing light ballast, and mold, will be completed in accordance with applicable regulations pursuant to 40 CFR 761 (PCBs), 40 CFR 273 (mercury-containing light ballast), and 29 CFR 1926 (molds) by workers with the hazardous waste operations and emergency response (HAZWOPER) training, as outlined in 29 CFR 1910.120 and 8 CCR 5192.

RR HAZ-6 New construction, excavations, and/or new utility lines within 10 feet or crossing existing high-pressure pipelines, natural gas/petroleum pipelines, or electrical lines greater than 60,000 volts will be designed and constructed in accordance with the California Code of Regulations (Title 8, Section 1541).

RR HAZ-7 Development will be designed and constructed in accordance with the airport environs land use plan for John Wayne Airport. Building height restrictions, as specified in the airport environs land use plan, would apply in the city.

5.8.3.2 GENERAL PLAN UPDATE POLICIES

The following are relevant policies of the Santa Ana General Plan Update that may contribute to reducing potential hazards impacts.

Conservation Element

- **Policy 1.5 Sensitive Receptor Decisions.** Consider potential impacts of stationary and non-stationary emission sources on existing and proposed sensitive uses and opportunities to minimize health and safety risks.

Economic Prosperity Element

- **Policy 2.3 Complimentary Businesses.** Encourage the development of mutually beneficial and complementary business clusters within the community.
- **Policy 2.5 Sufficient Industrial Land.** Ensure sufficient availability of industrial zoned properties and businesses that provide employment opportunities for the City's resident population.

Land Use Element

- **Policy 1.5 Sensitive Receptor Decisions.** Consider potential impacts of stationary and non-stationary emission sources on existing and proposed sensitive uses and opportunities to minimize health and safety risks.
- **Policy 3.7 Attractive Environment.** Promote a clean, safe, and creative environment for Santa Ana's residents, workers, and visitors.
- **Policy 3.8 Sensitive Receptors.** Avoid the development of sensitive receptors in close proximity to land uses that pose a hazard to human health and safety, due to the quantity, concentration, or physical or chemical characteristics of the hazardous materials that they utilize, or the hazardous waste that they generate or emit.
- **Policy 3.9 Improving Health.** Improve the health of residents by discontinuing the operation of noxious, hazardous, dangerous, and polluting uses that are in close proximity to sensitive receptors.

Noise Element

- **Policy 3.1 Residential Development.** Residential development within the John Wayne Airport (JWA) 65 dB(A) CNEL Noise Contour or greater is not supported.
- **Policy 3.2 Flight Paths.** Advocate that future flight path selection be directed away from existing noise sensitive land uses.

Open Space Element

- **Policy 2.1 Public Safety Agencies.** Collaborate with the Police Department and the Fire Authority to promote the implementation of crime prevention through environmental design principals for all development projects.
- **Policy 2.2 Code Compliance.** Require all development to comply with the provisions of the most recently adopted fire and building codes and maintain an ongoing fire inspection program to reduce fire hazards.
- **Policy 2.3 Crime Prevention.** Coordinate, partner, and build relationships with community members and stakeholders to develop and implement crime prevention strategies through restorative practices that focus on rehabilitation, community service, and public safety.
- **Policy 2.4 Community Partnerships.** Provide alternative methods to improve police services that support community partnerships, build public trust, and proactively address public safety issues.
- **Policy 2.5 Safety Programs.** Promote early childhood education and prevention programs that improve public safety and maintain ongoing community education opportunities.
- **Policy 2.6 School Safety.** Collaborate with local schools to establish and implement comprehensive and coordinated services that enhance the security and safety of students, educators, and administrators on and off campus.
- **Policy 2.7 Staffing Levels.** Maintain staffing levels for sworn peace officers, fire fighters, emergency medical responders, and civilian support staff to provide quality services and maintain an optimal response time citywide.
- **Policy 2.8 Efficiency Standards.** Ensure that equipment, facilities, technology, and training for emergency responders are updated and maintained to meet modern standards of safety, dependability, and efficiency.
- **Policy 2.9 Quality Employees.** Enhance public safety efforts by actively seeking a diverse and talented pool of public safety candidates who possess the values and skills consistent with those of the community.

Open Space Element

- **Policy 2.3 Hazardous Materials.** Reduce or eliminate, as feasible, the use of pesticides and herbicides that negatively impact human health at park facilities and publicly accessible open spaces.

Safety Element

- **Policy 2.1 Regional Collaboration.** Consult and collaborate with federal, state, and regional agencies to identify and regulate the disposal and storage of hazardous materials, and prevent the illegal transportation and disposal of hazardous waste.

- **Policy 2.2 Hazardous Waste Generators.** Collaborate with appropriate agencies to identify and inventory all users and handlers of hazardous materials to proactively mitigate potential impacts.
- **Policy 2.3 Transportation and Storage.** Coordinate with the County of Orange, the California Department of Transportation, and other relevant parties to enforce state and local laws regulating the storage and transport of hazardous materials within the City of Santa Ana, and limit truck routes through the City to arterial streets away from natural habitats and sensitive land uses.
- **Policy 2.4 Planning and Remediation.** Determine the presence of hazardous materials and/or waste contamination prior to approval of new uses and require that appropriate measures be taken to protect the health and safety of site users and the community.
- **Policy 2.5 Education and Best Practices.** Improve public awareness of best practices for and participation in household hazardous waste management and disposal.
- **Policy 2.6 Existing Sensitive Uses.** Partner and collaborate with property owners, businesses, and community groups to develop strategies to protect and minimize risks from existing hazardous material sites to existing nearby sensitive uses.

5.8.4 Environmental Impacts

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

Impact 5.8.1: Project construction and operations would involve the transport, use, and/or disposal of hazardous materials. [Thresholds H-1, H-2, and H-3]

Existing Hazardous Materials Sites

As shown in Table 5.8-5, there are 73 open leaking UST or cleanup site cases in the city and sphere of influence.

Table 5.8-5 Hazardous Materials Sites in the Plan Area: Open Cases

Site Name	Address	Type Of Site	Cleanup Status
Plan Area			
1300 Normandy Partners	1300 E. Normandy Pl.	Cleanup Program Site	Open – Inactive
7-Eleven Store #18167	1020 S. Bristol St.	LUST	Open – Site Assessment
Aeromil Engineering Co., Inc.	2344 Pullman St.	LUST	Open – Remediation
Aluminum Precision Products	2621 S. Susan St.	Cleanup Program Site	Open – Inactive
AMR Combs Fuel Farm	19301 Campus Dr.	LUST	Open – Remediation
Archies Texaco	4502 Westminster Ave.	LUST	Open – Site Assessment
ARCO #1047	2646 W. 1st St.	LUST	Open - Remediation
ARCO #3085	3361 S. Bristol St.	LUST	Open - Remediation
ARCO #5147	2245 S. Main St.	LUST	Open – Eligible for Closure

Table 5.8-5 Hazardous Materials Sites in the Plan Area: Open Cases

Site Name	Address	Type Of Site	Cleanup Status
ARCO #6071	3414 S. Main St.	LUST	Open - Remediation
Barlen Enterprises Industrial Park	1410 E. St. Gertrude Pl.	Cleanup Program Site	Open – Assessment & Interim Remedial Action
Behr Process Corporation	3001 S. Yale St.	Cleanup Program Site	Open - Remediation
Bell Industries	1831 Ritchey St.	Cleanup Program Site	Open - Remediation
BFM Energy Products Corp.	2040 E. Dyer Rd.	Cleanup Program Site	Open - Remediation
Bristol Fiberlite Industries	401 E. Goetz Ave.	LUST	Open – Eligible for Closure
Cherry Aerospace	1224 E. Warner Ave.	Cleanup Program Site	Open - Remediation
Chevron #9-1825	2261 N. Fairview St.	LUST	Open – Verification Monitoring
Circuit One	2103 S. Grand Ave.	Cleanup Program Site	Open – Remediation
CTC Global Facility	3901 S. Main St.	Cleanup Program Site	Open – Site Assessment
Diceon Electronics (Former)/Elexsys International Corp.	2215 S. Standard Ave.	Cleanup Program Site	Open – Site Assessment
Dyer Business Park	3107 Kilson Dr.	Cleanup Program Site	Open – Site Assessment
E-Z Serve #100841	2409 W. Edinger Ave.	LUST	Open – Verification Monitoring
Eco Gasoline	1131 S. Main St.	LUST	Open - Remediation
El Modena Flood Channel Investigation	Esplanade Ave. & Fairhaven Ave.	Cleanup Program Site	Open – Site Assessment
Embee Plating	2144 S. Hathaway St.	Cleanup Program Site	Open - Remediation
Former Alcoa Composites/Tre Astech Facility	3030 S. Red Hill Ave.	Cleanup Program Site	Open - Remediation
Former Industrial Property	201 E. Stevens Ave.	Cleanup Program Site	Open – Site Assessment
Former Los Amigos Dry Cleaner	1312 W. Edinger Ave.	Cleanup Program Site	Open – Verification Monitoring
Former Unocal 76 SS #5247 (AKA Crevier BMW)	1500 Auto Mall Rd. (Formerly 2031 E. Edinger)	LUST	Open – Site Assessment
G & M Oil #24	3301 S. Bristol St.	LUST	Open – Verification Monitoring
Gallade Chemical Inc	1230 E. St. Gertrude Pl.	Cleanup Program Site	Open - Remediation
GE Plastics	1831 E. Carnegie Ave.	Cleanup Program Site	Open - Remediation
Guadalajara Tires	2501 Westminster	LUST	Open - Remediation
Gulf Station (Chevron #35-2689)	1606 S. Standard Ave.	LUST	Open – Assessment & Interim Remedial Action
Halladay Properties	3035 Halladay	Cleanup Program Site	Open – Site Assessment
Holchem Service Chemical Co.	1341 Maywood Ave., East	Cleanup Program Site	Open - Remediation
Humble Oil Station 7-8869	1440 Broadway	LUST	Open – Site Assessment
Isaac Main Plaza/Metro CW	1801 S. Main St.	LUST	Open – Verification Monitoring
Isaac, Inc. (Village Pnt & Bdy)	1734 W. 1st St.	LUST	Open – Eligible for Closure
ITT Cannon	666 E. Dyer Rd.	Cleanup Program Site	Open - Remediation
JMA Trust	3320 S. Yale St.	Cleanup Program Site	Open – Site Assessment
Key Cleaners	3033 S. Bristol St.	Cleanup Program Site	Open – Site Assessment
L&N Costume Services	1602 E. Edinger Ave.	Cleanup Program Site	Open – Site Assessment
Llyod Pest Control Upgradient VOC Plume	566 E. Dyer Rd.	Cleanup Program Site	Open - Inactive
Martin Aviation (Fuel Farm)	19331 S. Airport Way	LUST	Open - Remediation
Mobil #18-HCN	1351 E. Dyer Rd.	LUST	Open – Eligible for Closure

Table 5.8-5 Hazardous Materials Sites in the Plan Area: Open Cases

Site Name	Address	Type Of Site	Cleanup Status
Newport Hydraulics	1716 S. Santa Fe St.	LUST	Open - Inactive
OCWD – South Basin	Hotel Terrace Dr.	Project	Open – Site Assessment
Orange County Fire Station #33	18992 Ike Jones Rd.	Cleanup Program Site	Open – Site Assessment
Orange County South Basin		Complex Site Cleanup Program Facility	
Orco Tools and Equipment	2100 Ritchey St.	LUST	Open - Remediation
SA Recycling	2002 W. 5th St.	Cleanup Program Site	Open – Eligible for Closure
Safety-Kleen	2120 S Yale St.	LUST	Open – Site Assessment
Santa Ana Tower F.A.A.	18990 Ike Jones Rd.	Cleanup Program Site	Open – Site Assessment
Shell #510 Former	510 N. Bristol St.	LUST	Open – Site Assessment
Shell Station #1202 (Former)	1202 E. Edinger Ave.	LUST	Open - Remediation
South Coast Auction	2202 S. Main St.	LUST	Open – Verification Monitoring
South Coast Business Center	3400-3500 Warner Ave.	Cleanup Program Site	Open - Remediation
SPS Technologies	2701 S. Harbor	Cleanup Program Site	Open - Remediation
Thrifty Oil #008	704 N. Bristol St.	LUST	Open - Remediation
Thrifty Oil #015	2016 W. 17th St.	LUST	Open - Remediation
Thrifty Oil #150	1539 S. Standard Ave.	LUST	Open - Remediation
Thrifty Oil #376	801 N. Bristol St.	LUST	Open – Eligible for Closure
Troy Computer	2322 Pullman St.	Cleanup Program Site	Open - Site Assessment
Ultramar, Inc. Station #750	1501 S. Broadway	LUST	Open - Site Assessment
Universal Circuits	1720-1800 Newport Circle, East	Cleanup Program Site	Open - Site Assessment
Unocal #5356	1913 W. Edinger Ave.	LUST	Open – Verification Monitoring
Unocal #5422	1502 E. Edinger Ave.	LUST	Open - Remediation
Unocal #7470	114 S. Bristol St.	LUST	Open - Remediation
US Divers	3323 W. Warner Ave.	Cleanup Program Site	Open - Inactive
Waste Oil UST	3323 W. Warner Ave.	Cleanup Program Site	Open - Inactive
Wells Fargo Bank	2301 S. Main St.	LUST	Open – Site Assessment
West Coast Plating, Former	2525 S. Birch St.	Cleanup Program Site	Open – Inactive

Source: SWRCB 2020.

Any development, redevelopment, or reuse on or immediately adjacent to any of these sites would require environmental site assessment by a qualified environmental professional to ensure that the relevant projects would not disturb hazardous materials on any of the hazardous materials sites or plumes of hazardous materials diffusing from one of the hazardous materials sites, and that any proposed development, redevelopment, or reuse would not create a substantial hazard to the public or the environment.

The environmental justice requirements of SB 1000 for cities to update public policies for disadvantaged communities in order to reduce unique or compounded health risks, promote civil engagement in the public decision-making process and prioritizing improvements and programs would also minimize any potential hazard.

In addition, the Community Air Protection Program (created by the California Air Resources Board in response to AB 617) would reduce exposure to communities most impacted by air pollution.

Existing Asbestos-Containing Materials and Lead-Based Paint

Many buildings in the plan area predate 1978 and thus may contain ACM and LBP. The history of Santa Ana is briefly described in Section 5.5, *Cultural Resources*. Demolition and removal of existing buildings could pose hazards to people and the environment through disturbance and/or release of ACM and LBP.

Routine Use, Storage, Transport, and Disposal of Hazardous Materials

Construction

Construction in accordance with the General Plan Update will involve demolition, grading, and construction of new buildings. Potentially hazardous materials used during construction include substances such as paints, sealants, solvents, adhesives, cleaners, and diesel fuel. There is potential for these materials to spill or to create hazardous conditions. However, the materials used will not be in such quantities or stored in such a manner as to pose a significant safety hazard. These activities will also be short term or one time in nature. Project construction workers will be trained in safe handling and hazardous materials use.

To prevent hazardous conditions, existing local, state, and federal laws—such as those listed under Section 5.8.1.1, *Regulatory Background*—will be enforced at the construction sites. For example, compliance with existing regulations would ensure that construction workers and the general public are not exposed to any risks related to hazardous materials during demolition and construction. Cal/OSHA has regulations concerning the use of hazardous materials, including requirements for safety training, exposure warnings, availability of safety equipment, and preparation of emergency action/prevention plans. For example, all spills or leakage of petroleum products during construction activities must be immediately contained, the hazardous material identified, and the material remediated in compliance with state and local regulations for that contaminant. All contaminated waste must be collected and disposed of at an appropriately licensed disposal or treatment facility.

Furthermore, strict adherence to all emergency response plan requirements set by the Orange County Fire Authority would be required throughout the duration of project construction.

Operation

Operation of projects developed pursuant to the General Plan Update would involve hazardous materials used in industrial and commercial land uses as well as hazardous materials used for cleaning and maintenance purposes in almost all developed land uses: cleaners, solvents, paints, pesticides, and fertilizers. The amounts of hazardous materials used would vary by land use type: amounts would be small for residential, school, institutional, and many office uses. Amounts would be larger for industrial uses; businesses selling hazardous materials, such as gasoline stations; and service businesses using hazardous materials in their operations, such as construction contractors, painters, cleaners, and printers.

The plan area has 112 small quantity generators of hazardous wastes in the plan area, 2 of which are conditionally exempt, and 18 large quantity generators of hazardous wastes (see Table 5.8-4, above).

The General Plan Update would designate 2,411 acres for industrial uses, a net increase of 683.1 acres over existing industrial uses (1,727.9 acres). The General Plan Update would designate a net decrease of 699.9 acres of commercial and office uses compared to existing conditions and would designate 251.4 acres for mixed uses, including commercial uses. Thus, General Plan Update buildout is expected to result in some increase in the number of hazardous waste generators. Hazardous wastes would be stored, transported, and disposed of in conformance with existing regulations of the EPA, US Department of Transportation, CalRecycle, and other agencies.

Accidental Release of Hazardous Materials

Construction and operation of projects approved under the General Plan Update would involve some risk of accidental release of hazardous materials used by the projects, as well as accidental disturbance of existing hazardous materials in the environment, such as petroleum products released from leaking USTs, or ACM or LBP in existing buildings that would be renovated or demolished. Use, storage, transport, and disposal of hazardous materials in conformance with regulations would reduce both the likelihood of an accidental release and the potential consequences in the event of an accidental release. Impacts would be less than significant.

Level of Significance Before Mitigation: With the implementation of RRs HAZ-1 through HAZ-5, Conservation Policy 1.5, Economic Prosperity Policies 2.3 and 2.5, Land Use Policies 1.5 and 3.7 through 3.9, Open Space Policy 2.3, and Safety Policies 2.1 through 2.6, Impact 5.8-1 would be less than significant.

Impact 5.8-2: The plan area includes 555 sites included on a list of hazardous materials compiled pursuant to Government Code Section 65962.5 that could create a significant hazard to the public or the environment. [Threshold H-4]

Searches of environmental databases described in Section 5.8.1.2, *Existing Conditions*, identified 555 sites in the plan area: 18 were large quantity generators of hazardous wastes, 112 were small quantity generators, and 425 were hazardous materials sites on the GeoTracker and/or EnviroStor databases.

The list of 130 hazardous waste generators does not document releases of hazardous materials, and these generators are not environmental concerns related to the buildout of the General Plan Update. Of the 425 sites listed on GeoTracker and/or EnviroStor, cases were closed at 362 sites (85 percent). Only 63 sites are still open, which means that assessment, remediation, and/or verification of remediation is required at those sites. All 425 sites listed in Tables 5.8-2 and 5.8-3 are known to regulatory agencies.

Any development, redevelopment, or reuse on or next to any of these sites would require environmental site assessment by a qualified environmental professional to ensure that the project would not disturb hazardous materials on any of the hazardous materials sites or plumes of hazardous materials diffusing from one of the hazardous materials sites, and that any proposed development, redevelopment, or reuse would not create a substantial hazard to the public or the environment. Phase I Environmental Site Assessments are required for land purchasers to qualify for the Innocent Landowner Defense under CERCLA and to minimize environmental liability under other laws such as RCRA, and for lenders as a prerequisite to extend a loan for purchase of land. Impacts would be less than significant.

Level of Significance Before Mitigation: With the implementation of RRs HAZ-1 through HAZ-5, Conservation Policy 1.5, Economic Prosperity Policies 2.3 and 2.5, Land Use Policies 3.7 through 3.9, Open Space Policy 2.3, and Safety Policies 2.1 through 2.6, Impact 5.8-2 would be less than significant.

Impact 5.8-3: Santa Ana is in the vicinity of an airport or within the jurisdiction of an airport land use plan. [Threshold H-5]

Land Use: Safety Compatibility Zones

Although part of the city is within Zone 6 (see Figure 5.8-1), the Traffic Pattern Zone for John Wayne Airport, there are no restrictions on residential land uses or on special characteristics (distracting lights or glare, sources of smoke or electrical interference, or attractors of birds), but Zone 6 prohibits outdoor stadiums and similar uses with very high intensities, and avoids children's schools, large day care centers, hospitals, and nursing homes (ALUC 2008). Safety zones are explained above in Table 5.8-1. The process for filing a project for a consistency determination with ALUC is specified in Section 4.7 of the AELUP. If the ALUC determines that a submittal is inconsistent with the AELUP, the ALUC must promptly notify the affected local agency. The local agency may modify the project to be consistent with the AELUP and resubmit the project to the ALUC for a determination of consistency, or choose to overrule the ALUC by following the procedure in Public Utilities Code Sections 21676 and 21676.5. This procedure requires the local agency to hold a public hearing with its governing body (e.g., Board of Supervisors, City Council), make specific findings that the proposed overruling is consistent with the purposes stated in Public Utilities Code Section 21670, and overrule the ALUC by at least a two-thirds vote of the governing body of the local agency.

Airspace Protection

Parts of the city are in areas where heights of structures are limited pursuant to FAA Part 77 Regulations that protect navigable airspace surrounding certain airports. The Airspace Protection Surface extends 10,000 feet horizontally from the runway at an elevation of 150 feet above the airport, or 206 feet above mean sea level (amsl), then angles upward an additional 4,000 feet horizontally at a slope of 1 vertical foot to 20 horizontal feet to an elevation of 400 feet amsl. Elevations in the part of Santa Ana under the Airspace Protection Surface range from 35 feet amsl at the southeast edge of the city to 60 feet amsl along the northeast edge of the Airspace Protection Surface. Maximum allowable heights of structures under the Airspace Protection Surface would vary by location. Existing heights of structures in Santa Ana are far below the maximum allowable heights under the Airspace Protection Surface. As set forth in Public Utilities Code Sections 21676 and 21676.5 and as discussed in the *California Airport Land Use Planning Handbook*, a key responsibility of an ALUC is to review particular types of local actions for compliance with the criteria and policies in a commission's adopted compatibility plan. Section 3.0 of the AELUP sets the policies and criteria by which a local action can be reviewed, and a determination of consistency can be made with the AELUP by the ALUC. Projects approved under the proposed General Plan Update would be required to comply with FAA airspace protection regulations using the AELUP consistency determination process. Thus, impacts are considered less than significant.

Heliports are only allowed outside of residential zoning districts with a conditional use permit pursuant to Section 41-621 of the Santa Ana Municipal Code. In addition, any proposed heliports shall undergo review by the ALUC,

obtain an Airspace Analysis from the FAA as specified in Section 2.1.5 of the AELUP, and confirm consistency with the AELUP prior to construction, as specified in Section 4.7 of the AELUP.

Level of Significance Before Mitigation: With the implementation of RR HAZ-7, Conservation Policy 1.5, Economic Prosperity Policy 2.3, Land Use Policy 3.9, and Noise Policies 2.1 and 3.1 through 3.3, Impact 5.8-3 would be less than significant.

Impact 5.8-4: Buildout of the General Plan Update could affect the implementation of an emergency responder or evacuation plan. [Threshold H-6]

The City of Santa Ana has prepared a draft emergency operations plan (EOP) to ensure the most effective allocation of resources for the maximum benefit and protection of the civilian population in time of emergency. The EOP's objective is to incorporate and coordinate all available City resources into an efficient organization capable of responding to any emergency. Though no EOP can prevent all death and destruction, good plans carried out by knowledgeable and well-trained personnel will minimize losses. Santa Ana's EOP establishes the emergency organization and assigns tasks and general procedures. It provides for coordination of planning efforts of the various emergency staff and service elements using the Standardized Emergency Management System and National Incident Management System with all levels of government.

The proposed General Plan Update permits development of substantial net increases of square footage and dwelling units. By increasing the population, traffic congestion may increase in these areas as well (see Section 5.16, *Transportation*, of this PEIR). Thus, in the event of an accident or natural disaster, evacuation plans and routes could be adversely affected by the increased traffic. However, the Santa Ana Police Department commands the City's Emergency Management Division. The Emergency Management Division responds to extraordinary emergency situations, including natural disasters.

The buildout of the General Plan Update would not result in substantial changes to the circulation patterns or emergency access routes, and would not block or otherwise interfere with use of evacuation routes. Buildout would not interfere with operation of the City's Emergency Operations Center and would not interfere with operations of emergency response agencies or with coordination and cooperation between such agencies; thus, impacts to emergency response planning would be less than significant.

Level of Significance Before Mitigation: With the implementation of Public Services Policies 2.1 through 2.9, Impact 5.8-4 would be less than significant.

Impact 5.8-5: Santa Ana is not in a designated fire hazard zone, and implementation of the General Plan Update will not expose structures and/or residences to wildland fire danger. [Threshold H-7]

The plan area is not within a fire hazard severity zone. The nearest fire hazard severity zone to the plan area is over three miles to the northeast. Thus, development pursuant to the General Plan Update would not pose wildland fire hazards, and impacts would be less than significant.

Level of Significance Before Mitigation: Due to the lack of wildland fire hazards in the plan area, Impact 5.8-5 would be less than significant.

5.8.5 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, some impacts would be less than significant: 5.8-1, 5.8-2, 5.8-3, 5.8-4, and 5.8-5.

There are no significant unavoidable adverse impacts relating to hazards.

5.8.6 References

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5.9 HYDROLOGY AND WATER QUALITY

This section of the Draft Program Environmental Impact Report (Draft PEIR) evaluates the potential of the Santa Ana General Plan Update (GPU) to impact hydrology and water quality conditions in the City of Santa Ana and its sphere of influence (plan area). Hydrology deals with the distribution and circulation of water, both on land and underground. Water quality deals with the quality of surface- and groundwater. Surface water includes lakes, rivers, streams, and creeks; groundwater is under the earth's surface.

The analysis in this section is based in part on the following technical reports:

- *City of Santa Ana General Plan Update Infrastructure Technical Report for Hydrology, Sewer, Water, and Water Quality*, Fuscoe, June 3, 2020.
- *City of Santa Ana General Plan Update Water Supply and Demand Technical Report*, Fuscoe, May 29, 2020.

Complete copies of these studies are included in the Technical Appendices to this Draft EIR (Volume II, Appendices H-a and H-b).

5.9.1 Environmental Setting

5.9.1.1 REGULATORY BACKGROUND

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

Federal

Clean Water Act and National Pollution Elimination Discharge System

The Clean Water Act establishes regulations to control the discharge of pollutants into the waters of the United States and regulates water quality standards for surface waters (US Code, Title 33, §§ 1251 et seq.). Under the act, the US Environment Protection Agency (EPA) is authorized to set wastewater standards and runs the National Pollutant Discharge Elimination System (NPDES) permit program. Under the NPDES program, permits are required for all new developments that discharge directly into Waters of the United States. The federal Clean Water Act requires wastewater treatment of all effluent before it is discharged into surface waters. NPDES permits for such discharges in the project region are issued by the Santa Ana Regional Water Quality Control Board (RWQCB).

Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA also issues Flood Insurance Rate Maps that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in the community. The design

standard for flood protection is established by FEMA. FEMA's minimum level of flood protection for new development is the 100-year flood event, also described as a flood that has a 1-in-100 chance of occurring in any given year. The project site is not in a 100-year floodplain.

State

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act (Water Code Sections 13000 et seq.), which was passed in California in 1969 and amended in 2013, the State Water Resources Control Board (SWRCB) has authority over state water rights and water quality policy. This act divided the state into nine regional basins, each under the jurisdiction of an RWQCB to oversee water quality on a day-to-day basis at the local and regional level. RWQCBs engage in a number of water quality functions in their respective regions. They regulate all pollutant or nuisance discharges that may affect either surface water or groundwater. The plan area is within the jurisdiction of the Santa Ana RWQCB.

State Water Resources Control Board Construction General Permit

The SWRCB has adopted a statewide Construction General Permit (Order No. 2012-0006-DWQ) for stormwater discharges associated with construction activity. These regulations prohibit the discharge of stormwater from construction projects that include one acre or more of soil disturbance. Construction activities subject to this permit include clearing, grading, and other disturbance to the ground, such as stockpiling or excavation, that results in soil disturbance of at least one acre of total land area. Individual developers are required to submit Permit Registration Documents (PRD) to the SWRCB for coverage under the NPDES permit prior to the start of construction. The PRDs include a Notice of Intent, risk assessment, site map, Stormwater Pollution Prevention Plan (SWPPP), annual fee, and a signed certification statement. The PRDs are submitted electronically to the SWRCB via the Stormwater Multiple Application and Report Tracking System (SMARTS) website.

The NPDES Construction General Permit requires all dischargers to (1) develop and implement a SWPPP that specifies best management practices (BMPs) to be used during construction of the project; (2) eliminate or reduce nonstorm water discharge to stormwater conveyance systems; and (3) develop and implement a monitoring program of all specified BMPs. The two major objectives of the SWPPP are to (1) help identify the sources of sediment and other pollutants that affect the water quality of stormwater discharges and (2) to describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as nonstorm water discharges.

State Water Resources Control Board General Industrial Permit

The General Industrial Permit is an NPDES General Permit (Order No. CAS000001) issued in compliance with section 402 of the Clean Water Act. The permit took effect on July 1, 2015. The General Industrial Permit regulates operators of facilities subject to stormwater permitting that discharge stormwater associated with industrial activity.

State Water Resources Control Board Trash Amendments

On April 7, 2015, the State Water Board adopted an Amendment to the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) to Control Trash, and Part 1, Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California. Together, they are collectively referred to as "the Trash Amendments." The purpose of the trash amendments is to reduce trash entering waterways statewide, provide consistency in the SWRCB's regulatory approach to protect aquatic life and public health beneficial uses, and reduce environmental issues associated with trash in state waters. There are two compliance tracks:

- **Track 1.** Permittees install, operate, and maintain a network of certified full capture systems to capture trash in storm drains, located in priority land use areas for municipal systems, and the entire facility for industrial and commercial permit holders.
- **Track 2.** Permittees install, operate, and maintain any combination of controls (structural and/or institutional) anywhere in their jurisdiction as long as they demonstrate that their system performs as well as Track 1.

The trash amendments provide a framework for permittees to implement the amendment's provisions. Full compliance must occur within 10 years of the permit, and permittees must also meet interim milestones such as average load reductions of 10 percent per year. The City is currently undergoing the process to comply with these new trash provisions.

Senate Bill 92

On June 27, 2017, Governor Brown signed Senate Bill (SB) 92 into law, which set forth new requirements focused on dam safety. As part of this legislation, dam owners must now submit inundation maps to the Department of Water Resources (DWR). After the maps are approved, the dam owner must submit an emergency action plan to the California Office of Emergency Services (Cal OES). The dam owner must submit updated plans and inundation maps every 10 years, or sooner under certain conditions. Cal OES will review and approve the emergency action plans. This legislation set forth additional provisions for the emergency action plans, including compliance requirements, exercises of the plan, and coordination with local public safety agencies (Cal OES 2019).

California Water Code Section 13751

In 1949, the California Legislature concluded that collecting information on newly constructed, modified or destroyed wells would be valuable in the event of underground pollution, and would also provide geologic information to better manage California's groundwater resources. Section 13751 of the Water Code requires Well Completion Report forms to be filed with DWR within 60 days from the date that construction, alteration, abandonment, or destruction of a well is completed. Completed forms are sent to the DWR Region Office whose boundaries include the area where the well is located (DWR 1999).

Sustainable Groundwater Management Act

The California Sustainable Groundwater Management Act (SGMA), a three-bill package signed into law in 2014, creates a framework for the management of groundwater sources throughout the state. Under SGMA, local agencies form groundwater sustainability agencies and create groundwater sustainability plans (GSP). If an agency is not formed, special act districts, such as Orange County Water District (OCWD), can submit "alternative plans" instead of GSPs. Timelines and requirements are based upon basin priority. Under SGMA, the Orange County Groundwater Basin is considered a medium-priority basin.

In January 2017 OCWD, the city of La Habra, and Irvine Ranch Water District submitted the Basin 8-1 Alternative Plan, which incorporates the requirements of GSPs and is considered to be "functionally equivalent" to a GSP. The Alternative Plan analyzes existing basin conditions and demonstrates that the Basin has been operated within its sustainable yield for more than 10 years without degrading water quality, reducing storage, or lowering groundwater levels. The Alternative Plan will be updated and resubmitted every 5 years as part of SGMA requirements.

Under the Alternative Plan, four management areas have been created for the Orange County Groundwater Basin. Each of these management areas has slightly different management goals and strategies based on the government bodies that serve them. The management areas are:

- **La Habra-Brea Management Area.** Includes the northern portion of the Basin outside of the OCWD service area.
- **OCWD Management Area.** Includes OCWD's service area, covering approximately 89 percent of the Basin.
- **South East Management Area.** Includes the southern and southeastern portions of the Basin that are outside of OCWD's service area.
- **Santa Ana Canyon Management Area.** Includes the eastern portion of the Basin outside of OCWD's service area.

Regional

Santa Ana River Basin Water Quality Control Plan

The "Basin Plan" establishes water quality standards for the ground and surface waters of the region and includes an implementation plan describing the actions by the RWQCB and others that are necessary to achieve and maintain the water quality standards. The RWQCB regulates waste discharges to minimize and control their effects on the quality of the region's ground and surface water. Permits are issued under various programs and authorities. The terms and conditions of these discharge permits are enforced through a variety of technical, administrative, and legal means. Water quality problems in the region are listed in the Basin Plan, along with the causes of those problems, if known. For water bodies with quality below the levels necessary to allow for all the beneficial uses of the water, plans for improving water quality are included. The latest update for the 1995 Water Quality Control Plan for the Santa Ana River Basin was issued in February 2016.

Orange County Regional Municipal Separate Stormwater Sewer System (MS4) Permit

The Santa Ana RWQCB MS4 Storm Water Permit, NPDES Permit No. CAS618030 (Order R8-2009-0030 as amended by Order No. R8-2010-0062), specifies waste discharge requirements for the County of Orange, the incorporated cities of Orange County, and the Orange County Flood Control District within the Santa Ana Region. Pursuant to this "Fourth-Term" MS4 Permit, the co-permittees were required to update and implement a drainage area management plan for their jurisdictions as well as local implementation plans (LIPs) that describe the co-permittees' urban runoff management programs for their local jurisdictions.

Under the City's LIP, land development policies pertaining to hydromodification and low impact development (LID) are regulated for new developments and significant redevelopment projects. The term "hydromodification" refers to the changes in runoff characteristics from a watershed caused by changes in land use condition. More specifically, hydromodification refers to the change in the natural watershed hydrologic processes and runoff characteristics (i.e., interception, infiltration, overland flow, interflow and groundwater flow) caused by urbanization or other land use changes that result in increased stream flows and sediment transport. The use of LID BMPs in project planning and design is to preserve a site's predevelopment hydrology by minimizing the loss of natural hydrologic processes such as infiltration, evapotranspiration, and runoff detention. LID BMPs try to offset these losses by introducing structural and nonstructural design components that restore these water quality functions into the project's land plan. These land development requirements are detailed in the County-Wide Model Water Quality Management Plan and Technical Guidance Document, approved in May 2011, which cities have incorporated into their discretionary approval processes for new development and redevelopment projects.

The LID hierarchy requires new developments and redevelopments to implement BMPs under the LID hierarchy, as described in the Technical Guidance Document. The LID hierarchy requires new projects to first infiltrate, then harvest and reuse, then biofilter stormwater runoff from their project site depending on site constraints. New projects and redevelopments within the plan area will follow the set hierarchy of BMP selection.

Local

City of Santa Ana Municipal Code

Chapter 7: The purpose of Chapter 7 (Floodplain Management Regulations) is to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions. Standards specified for new subdivisions and other proposed development include:

- Identifying the special flood hazard areas[1] and base flood elevations.
- Identifying the elevations of lowest floors of all proposed structures and pads on the final plans.
- Providing an application for map revision for sites filled above the base flood elevation with the following as-built information for each structure:

[1] Special flood hazard areas are areas within the 100-year flood zone area.

- Lowest floor elevation.
- Pad elevation.
- Lowest adjacent grade.

- Minimizing flood damage.
- Providing public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage.
- Providing adequate drainage to reduce exposure to flood hazards.

Chapter 18 Article IV: The purpose of Chapter 18 Article IV (Water Pollution) of the municipal code is to participate in the improvement of water quality and comply with federal requirements for the control of urban pollutants in stormwater runoff that enters the network of storm drains throughout Orange County. The article includes prohibitions on illicit connections and discharges, urban runoff control measures, and permit requirements.

City of Santa Ana Storm Drain Master Plan

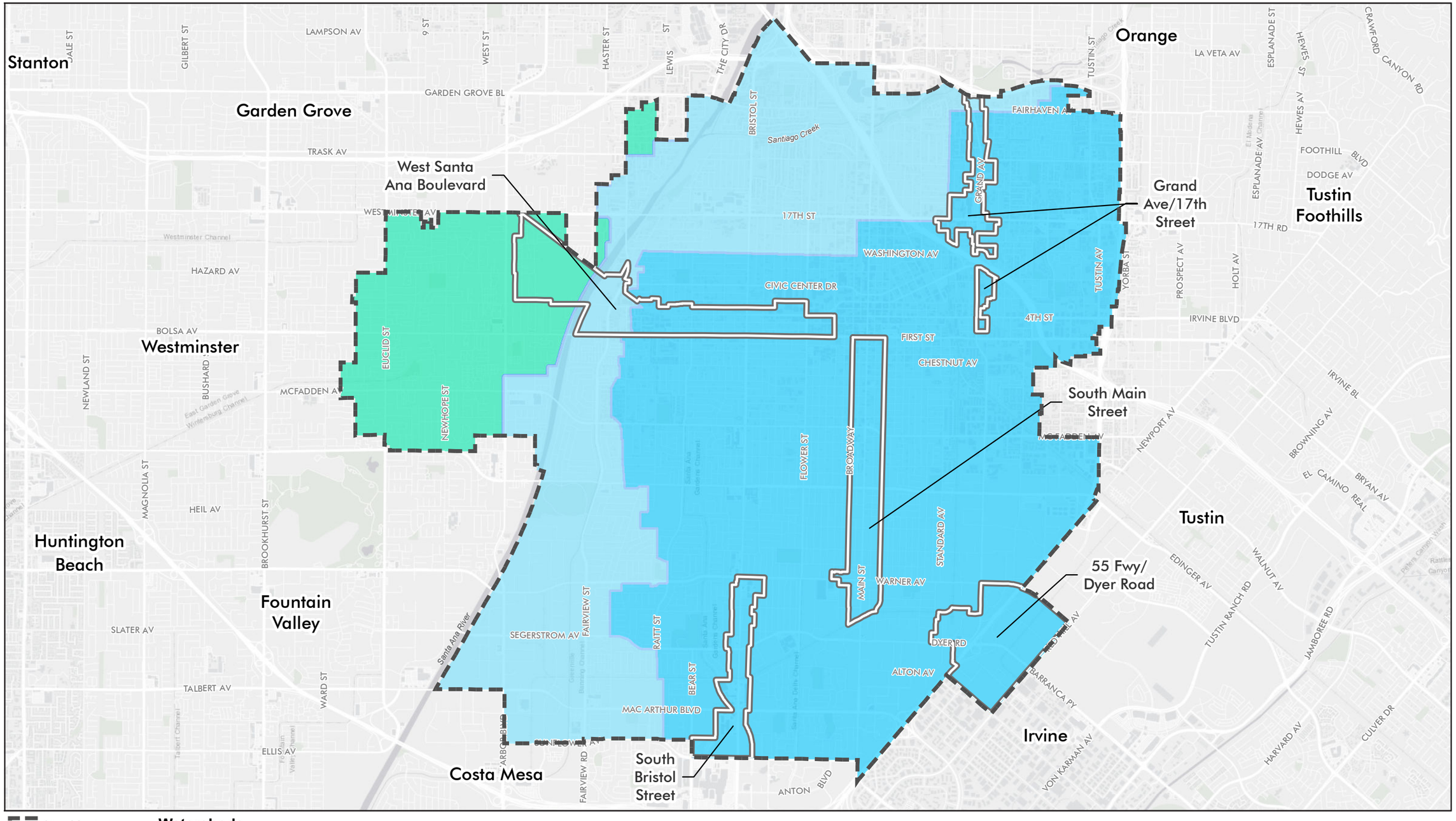
The purpose of the Master Plan of Storm Drainage (MPD) is to provide comprehensive long-range planning for the implementation and development of drainage facility improvements, determine the cost of implementing such facilities, and discuss funding priorities of the improvements in Santa Ana. Main collector elements (storm drain facilities 36 inches or larger) in the city were modeled with the goal of identifying issues related to existing storm drain facilities. Flooding results for the 10-, 25-, and 100-year storm conditions were compared to County of Orange design protection levels for streets in order to determine deficient segments and locations (Michael Baker 2015).

5.9.1.2 EXISTING CONDITIONS

Watersheds

The plan area spans three separate watersheds, each of these serving the plan area as well as surrounding areas. The northwestern portion of the plan area drains to the Anaheim Bay–Huntington Harbor Watershed, the northern and southwestern portions drain to the Santa Ana River Watershed, and the southeastern and eastern portions of the plan area drain to the Newport Bay Watershed (see Figure 5.9-1, *City of Santa Ana Watersheds*).

Figure 5.9-1 - City of Santa Ana Watersheds



Source: FUSCOE Engineering, 2020

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Surface Water Quality

Under Section 303(d) of the Clean Water Act, states are required to identify water bodies that do not meet their water quality standards. Once a water body has been listed as impaired on the 303(d) list, a total maximum daily load (TMDL) for the constituent of concern (pollutant) must be developed for that water body. A TMDL is an estimate of the daily load of pollutants that a water body may receive from point sources, nonpoint sources, and natural background conditions (including an appropriate margin of safety) without exceeding its water quality standard. Facilities and activities that are discharging into the water body, collectively, must not exceed the TMDL. In general terms, Municipal Separate Storm Sewer Systems (MS4) and other dischargers in each watershed are collectively responsible for meeting the required reductions and other TMDL requirements by the assigned deadline.

TMDLs have been established for pesticides, pathogens, sediment, and nutrients for the Upper and Lower Newport Bay. The remaining 303(d) listed impairments shown in Table 5.9-1 have not yet been established and are pending approval for TMDL establishments for 2019 to 2029.

Table 5.9-1 List of 303(d) Impairments and TMDLs

Water body/Channel	List of 303(d) Impairments	TMDL
East Garden Grove Wintersburg Channel	Ammonia (Unionized)	Pending 2021 TMDL Establishment for Ammonia
Bolsa Chica Ecological Reserve	Toxicity	Pending 2027 TMDL Establishment for Toxicity
Bolsa Chica State Beach	Copper, Nickel	Pending 2019 TMDL Establishment for Copper and Nickel
Huntington City Beach	No Impairments	N/A
Huntington Beach State Park	Polychlorinated Biphenyls (PCBs)	Pending 2019 TMDL Establishment for PCBs
Talbert Channel	Toxicity	Pending 2029 TMDL Establishment for Toxicity
Santa Ana River, Reach 1	No Impairments	N/A
Newport Slough	Indicator Bacteria	Pending 2021 TMDL Establishment for Indicator Bacteria
Newport Beach	No Impairments	N/A
Balboa Beach	DDT, Dieldrin, PCBs	Pending 2019 TMDL Establishment for DDT, Dieldrin, and PCBs
Santa Ana River Delhi Channel	No Impairments	N/A
Costa Mesa Channel	No Impairments	N/A
Newport Bay, Upper	Chlordane, Copper, DDT, Indicator Bacteria, Malathion, Nutrients, PCBs, Sedimentation, Toxicity	TMDLs for Chlordane, DDT, and PCBs Established 2013 TMDL for Chlorpyrifos/Diazinon Established 2004 TMDL for Lead Established 2000 TMDLs for Nutrients and Sedimentation Established 1999 Pending 2019 TMDL Establishment for Copper Pending 2027 TMDL Establishment for Malathion and Toxicity
Lower Newport Bay	Chlordane, Copper, DDT, Indicator Bacteria, Nutrients, PCBs, Sedimentation, Toxicity	TMDLs for Chlordane, DDT, and PCBs Established 2013 TMDL for Chlorpyrifos/Diazinon Established 2004 TMDL for Lead Established 2000 TMDLs for Nutrients and Sedimentation Established 1999 Pending 2019 TMDL Establishment for Copper Pending 2027 TMDL Establishment for Toxicity
Newport Beach West Jetty	No Impairments	N/A
Corona Del Mar State Beach	No Impairments	N/A

Source: Fuscoe 2020.

Existing Surface Water Conditions

According to the Santa Ana Region Water Action Plan, the channels with existing beneficial uses that serve the plan area include San Diego Creek; the Santa Ana River; and coastal wetlands, bays, and tidal prisms. Table 5.9-2 lists receiving waters in the plan area along with their beneficial uses.

Table 5.9-2 List of Receiving Water and Beneficial Uses

Receiving Water	Beneficial Use
Lower Santa Ana River Basin – Santa Ana River Reach 1	MUN – Municipal and Domestic Supply GWR – Groundwater Recharge REC 1 – Water Contact Recreation REC 2 – Non-Contact Water Recreation WARM – Warm Freshwater Habitat WILD – Wildlife Habitat RARE – Rare, Threatened, or Endangered Species
Lower Santa Ana River Basin – Santa Ana-Delhi Channel	REC 2 – Non-Contact Water Recreation WARM – Warm Freshwater Habitat WILD – Wildlife Habitat RARE – Rare, Threatened, or Endangered Species
Lower Santa Ana River Basin – San Diego Creek Reach 1	REC 1 – Water Contact Recreation REC 2 – Non-Contact Water Recreation WARM – Warm Freshwater Habitat WILD – Wildlife Habitat
Lower Newport Bay	NAV – Navigation REC 1 – Water Contact Recreation REC 2 – Non-Contact Water Recreation COMM – Commercial and Sportfishing RARE – Rare, Threatened, or Endangered Species WILD – Wildlife Habitat SPWN – Spawning, Reproduction, and Development MAR – Marine Habitat SHEL – Shellfish Harvesting
Upper Newport Bay	REC 1 – Water Contact Recreation REC 2 – Non-Contact Water Recreation COMM – Commercial and Sportfishing BIOL – Biological Habitat of Significance EST – Estuarine Habitat COMM – Commercial and Sportfishing RARE – Rare, Threatened, or Endangered Species WILD – Wildlife Habitat SPWN – Spawning, Reproduction, and Development MAR – Marine Habitat SHEL – Shellfish Harvesting MAR – Marine Habitat SHEL – Shellfish Harvesting
Bolsa Chica Ecological Reserve	REC 1 – Water Contact Recreation REC 2 – Non-Contact Water Recreation BIOL – Biological Habitat of Significance EST – Estuarine Habitat RARE – Rare, Threatened, or Endangered Species

Table 5.9-2 List of Receiving Water and Beneficial Uses

Receiving Water	Beneficial Use
	WILD – Wildlife Habitat SPWN – Spawning, Reproduction, and Development MAR – Marine Habitat
Huntington Beach Wetlands	REC 1 – Water Contact Recreation REC 2 – Non-Contact Water Recreation BIOL – Biological Habitat of Significance RARE – Rare, Threatened, or Endangered Species WILD – Wildlife Habitat SPWN – Spawning, Reproduction, and Development MAR – Marine Habitat
Santa Ana River Salt Marsh	REC 1 – Water Contact Recreation REC 2 – Non-Contact Water Recreation BIOL – Biological Habitat of Significance RARE – Rare, Threatened, or Endangered Species WILD – Wildlife Habitat MAR – Marine Habitat EST – Estuarine Habitat
Tidal Prisms of Flood Control Channels Discharging to Coastal or Bay Waters	REC 1 – Water Contact Recreation REC 2 – Non-Contact Water Recreation COMM – Commercial or Sport Fishing WILD – Wildlife Habitat MAR – Marine Habitat
Tidal Prism of Santa Ana River and Newport Slough	REC 1 – Water Contact Recreation REC 2 – Non-Contact Water Recreation COMM – Commercial or Sport Fishing WILD – Wildlife Habitat RARE – Rare, Threatened, or Endangered Species MAR – Marine Habitat
Tidal Prism of Santa Ana-Delhi Channel	REC 2 – Non-Contact Water Recreation WILD – Wildlife Habitat RARE – Rare, Threatened, or Endangered Species MAR – Marine Habitat
Source: Fuscoe 2020.	

General water quality objectives have been prescribed in the Basin Plan for all surface waters within the Santa Ana River Region. In order to maintain the beneficial uses listed in Table 5.9-2, inland surface waters must achieve these water quality objectives. The following numeric objectives have been established by the Basin Plan for the Santa Diego Creek, Reach 1 that receives flows from the plan area:

- Total Dissolved Solids: 1,500 mg/L
- Total Inorganic Nitrogen: 13 mg/L
- Chemical Oxygen Demand: 90 mg/L

General water quality objectives have been prescribed for the upstream portions of the Santa Ana River Watershed and its inland surface streams. However, site-specific objectives have not been determined for the

reaches surrounding and fed by the plan area. These areas are often impaired (by high levels of minerals), and there is not sufficient historic data to designate objectives based on natural background conditions.

Groundwater Supply

The Orange County (OC) Basin underlies the northerly half of Orange County beneath broad lowlands. The OC Basin managed by OCWD covers an area of approximately 350 square miles, bordered by the Coyote and Chino Hills to the north, the Santa Ana Mountains to the northeast, and the Pacific Ocean to the southwest. The OC Basin boundary extends to the Orange County–Los Angeles County line to the northwest, where groundwater flows across the county line into the Central Groundwater Basin of Los Angeles County. The total thickness of sedimentary rocks in the OC Basin is over 20,000 feet, with only the upper 2,000 to 4,000 feet containing fresh water. The Pleistocene or younger aquifers comprising this OC Basin are over 2,000 feet deep and form a complex series of interconnected sand and gravel deposits. The OC Basin's full volume is approximately 66 million acre-feet.

The OCWD was formed in 1933 by a special legislative act of the California State Legislature to protect and manage the county's vast, natural groundwater supply using the best available technology and defend its water rights to the OC Basin. Groundwater levels are managed within a safe basin operating range to protect the long-term sustainability of the OC Basin and to protect against land subsidence. OCWD regulates groundwater levels in the OC Basin by regulating the annual amount of pumping. As mentioned in Section 5.9.1.1, the Basin has been operated within its sustainable yield for more than 10 years without degrading water quality, reducing storage, or lowering groundwater levels.

In 1928, Anaheim, Fullerton, and Santa Ana joined 10 other Southern California cities in the formation of the Metropolitan Water District of Southern California (MWD). The aim was to import water from the Colorado River. The supplemental water supplies of MWD encouraged other Orange County water providers to collaborate, creating the Coastal Municipal Water District in 1941 and Orange County Municipal Water District in 1951. The district would later change its name to Municipal Water District of Orange County (MWDOC).

The OC Basin is not adjudicated, and therefore pumping from the OC Basin is managed through a process that uses financial incentives to encourage groundwater producers to pump a sustainable amount of water. The framework for the financial incentives is based on establishing the basin production percentage (BPP), the percentage of each producer's total water supply that comes from groundwater pumped from the OC Basin. Groundwater production at or below the BPP is assessed a replenishment assessment. While there is no legal limit as to how much an agency pumps from the OC Basin, there is a financial disincentive to pump above the BPP. Agencies that pump above the BPP are charged the replenishment assessment plus the Basin Equity Assessment, which is calculated so that the cost of groundwater production is greater than MWDOC's full-service rate. The basin equity assessment can be increased to discourage production above the BPP. The BPP is set uniformly for all producers by OCWD on an annual basis (Arcadis 2016).

Groundwater production accounts for roughly 77 percent of the water supply in the plan area. The City's water system has a total of 21 groundwater wells.

Groundwater Recharge Facilities

Recharging water into the OC Basin through natural and artificial means is essential to support pumping from the basin. Active recharge of groundwater began in 1949, in response to increasing drawdown of the OC Basin and the consequent threat of seawater intrusion. The OC Basin's primary source of recharge is flow from the Santa Ana River, which is diverted into recharge basins, and its main Orange County tributary, Santiago Creek. Other sources of recharge water include natural infiltration, recycled water, and imported water. Natural recharge consists of subsurface inflow from local hills and mountains, infiltration of precipitation and irrigation water, recharge in small flood control channels, and groundwater underflow to and from Los Angeles County and the ocean.

Untreated imported water is used to recharge the OC Basin through the surface water recharge system in multiple locations, such as Anaheim Lake, Santa Ana River, Irvine Lake, and San Antonio Creek. Treated imported water can be used for in-lieu recharge, as was performed extensively from 1977 to 2007 (Arcadis 2016).

OCWD, MWDOC, and MWD have developed a successful and efficient groundwater replenishment program to increase storage in the OC Basin. The groundwater replenishment program allows MWD to sell groundwater replenishment water to OCWD and make direct deliveries to agency distribution systems in lieu of producing water from the groundwater basin when surplus surface water is available. This program indirectly replenishes the OC Basin by avoiding pumping. In the in-lieu program, OCWD requests an agency to halt pumping from specified wells. The agency then takes replacement water through its import connections, which is purchased by OCWD from MWD. OCWD purchases the water at a reduced rate, then bills the agency for the amount it would have had to pay for energy and the replenishment assessment if it had produced the water from its wells. The deferred local production results in water being left in local storage for future use.

Groundwater Quality

OCWD is responsible for managing the OC Basin. To maintain groundwater quality, OCWD conducts an extensive monitoring program that serves to manage the OC Basin's groundwater production, control groundwater contamination, and comply with all required laws and regulations. A network of nearly 700 wells provides OCWD with samples that are tested for a variety of purposes. OCWD collects 600 to 1,700 samples each month to monitor basin water quality. These samples are collected and tested according to approved federal and state procedures as well as industry-recognized quality assurance and control protocols.

The OC Basin also has prescribed beneficial uses and water quality objectives. According to the Santa Ana RWQCB Basin Plan, beneficial uses for the Orange Groundwater Management Zone include:

- MUN – Municipal and Domestic Supply
- AGR – Agricultural Supply
- IND – Industrial Service Supply
- PROC – Industrial Process Supply

Numeric water quality objectives in the Basin Plan have been established for the OC Basin:

- Total Dissolved Solids: 580 mg/L
- Nitrate as Nitrogen: 3.4 mg/L

Salinity is a significant water quality problem in many parts of southern California, including Orange County. Salinity is a measure of the dissolved minerals in water, including both total dissolved solids (TDS) and nitrates. The portions of the OC Basin with the highest levels are generally in the cities of Irvine, Tustin, Yorba Linda, Anaheim, Placentia, and Fullerton. OCWD continually monitors the levels of TDS in wells throughout the OC Basin. The TDS concentration in the OC Basin is expected to decrease over time because the TDS concentration of the water used to recharge the OC Basin is approximately 50 mg/L.

Nitrates are one of the most common and widespread contaminants in groundwater supplies, originating from fertilizer use, animal feedlots, wastewater disposal systems, and other sources. The maximum contaminant level for nitrate in drinking water is 10 mg/L. OCWD regularly monitors nitrate levels in groundwater and works with producers to treat wells that have exceeded safe levels of nitrate concentrations. OCWD manages the nitrate concentration of water recharged by its facilities to reduce nitrate concentrations in groundwater.

Furthermore, the south basin area includes a plume originating from more than 20 industrial locations located in Santa Ana, Irvine, and Tustin. The plume is bounded by Edinger Avenue, Main Street, the I-405 Freeway, Red Hill, and Von Karman. The contaminants of concern include volatile organic compounds (VOCs) and perchlorate. The uncontrolled plume occurs predominately in the shallow aquifer at 100-foot depth which flows into a deeper principal aquifer, bringing VOC contaminants with it. So far, contaminants have arrived in two municipal drinking water wells (OCWD 2018). OCWD is embarking on a comprehensive plan to control the spread and eventually remove these chemicals that have migrated beyond their original pollution sources. Regulatory oversight is provided by the Department of Toxic Substance Control (DTSC) and the Regional Water Quality Control Board (RWQCB). These two state agencies are working closely with OCWD and some cooperative potentially responsible parties to map the occurrence of the contaminants, identify appropriate remedies and implement groundwater cleanup (OCWD 2020a). As a component of the remedial plan, OCWD's consultant performed an assessment of the risk to human health and the environment associated with contaminated groundwater in the south basin area (OCWD 2020b).

Other contaminants that OCWD monitors in the OC Basin include:

- Methyl tertiary butyl ether[2]
- Volatile organic compounds
- NDMA[3]
- 1-4-dioxane[4]
- Perchlorate[5]

[2] MTBE is almost exclusively used as a fuel additive in gasoline.
[3] NDMA can be unintentionally produced in and released from industrial sources. Potential industrial sources include byproducts from tanneries, pesticide manufacturing plants, rubber and tire manufacturers, alkylamine manufacture and use sites, fish processing facilities, foundries and dye manufacturers.
[4] 1,4-Dioxane is a trace contaminant of some chemicals used in cosmetics, detergents, and shampoos.
[5] Perchlorate is used in munitions, fireworks, explosives, airbag initiators for vehicles, matches, signal flares, fertilizers, chlorine cleaners, and pool chlorination chemicals.

- Selenium
- Constituents of emerging concern

Storm Drain System

Storm drain lines throughout the plan area include both City and Orange County Flood Control District (OCFCD) drainage facilities to convey stormwater runoff. All underground lines are under jurisdiction of the City, and all the open flood control channels are maintained by OCFCD. One open trapezoidal channel that runs west from Harbor Boulevard to south of 1st Street is owned and maintained by the City.

The City storm drain infrastructure feeds to a series of OCFCD regional drainage channels. These channels and their respective drainage areas divide the plan area into seven separate regional watersheds (Michael Baker 2015), named after the drainage channel that they flow to. The seven channels are:

- **Wintersburg/Garden Grove.** Located in the northwest corner of the city, drains to Anaheim Bay–Huntington Harbor Watershed. Services portions of the West Santa Ana Boulevard focus area.
- **Greenville-Banning.** Located in the southwest of the city, drains to the Santa Ana River Watershed. Services portions of the West Santa Ana Boulevard focus area.
- **Gardens.** Located in the southern portion of the city, drains to the Newport Bay Watershed. Serves portions of the West Santa Ana Boulevard focus area.
- **Santa Ana.** Located in the northern portion of the city, drains to the Santa Ana River Watershed. Services portions of the 17th Street and Grand and West Santa Ana Boulevard focus areas.
- **Delhi.** Located in the southern portion of the city, drains to the Newport Bay Watershed. Services the South Main focus area and portions of the 17th Street and Grand and West Santa Ana Boulevard focus areas.
- **Santa Fe.** Located in the northeastern corner of the city, drains to the Newport Bay Watershed. Services portions of the 17th Street and Grand focus area.
- **Lane-Barranca.** Located in the southeastern corner of the city, drains to the Newport Bay Watershed. Services the 55 Freeway and Dyer Road focus area.

Additional major drainage features within the city include trunk lines that outlet to the larger drainage channels. Storm drain facilities serving the focus areas are described in Table 5.9-3

Table 5.9-3 Existing Drainage Facilities in the Focus Areas

Focus Area	Acreage	Primary Drainage Facility
West Santa Ana Boulevard	604	12"–60" City storm drain lines OCFCD drainage channels Santa Ana River (OCFCD maintained)
17th Street and Grand	81	36"–81" City storm drain lines
South Main Street	451	12"–84" City storm drain lines
South Bristol Street	232	12"–72" City storm drain lines OCFCD drainage channel (Gardens)
55 Freeway and Dyer Road	449	12"–48" City storm drain lines OCFCD drainage channel (Lane-Barranca)

Source: Fuscoe 2020.

See Figure 5.9-2, *Existing Storm Drain System,* which shows the existing storm drain system throughout the city and the focus areas.

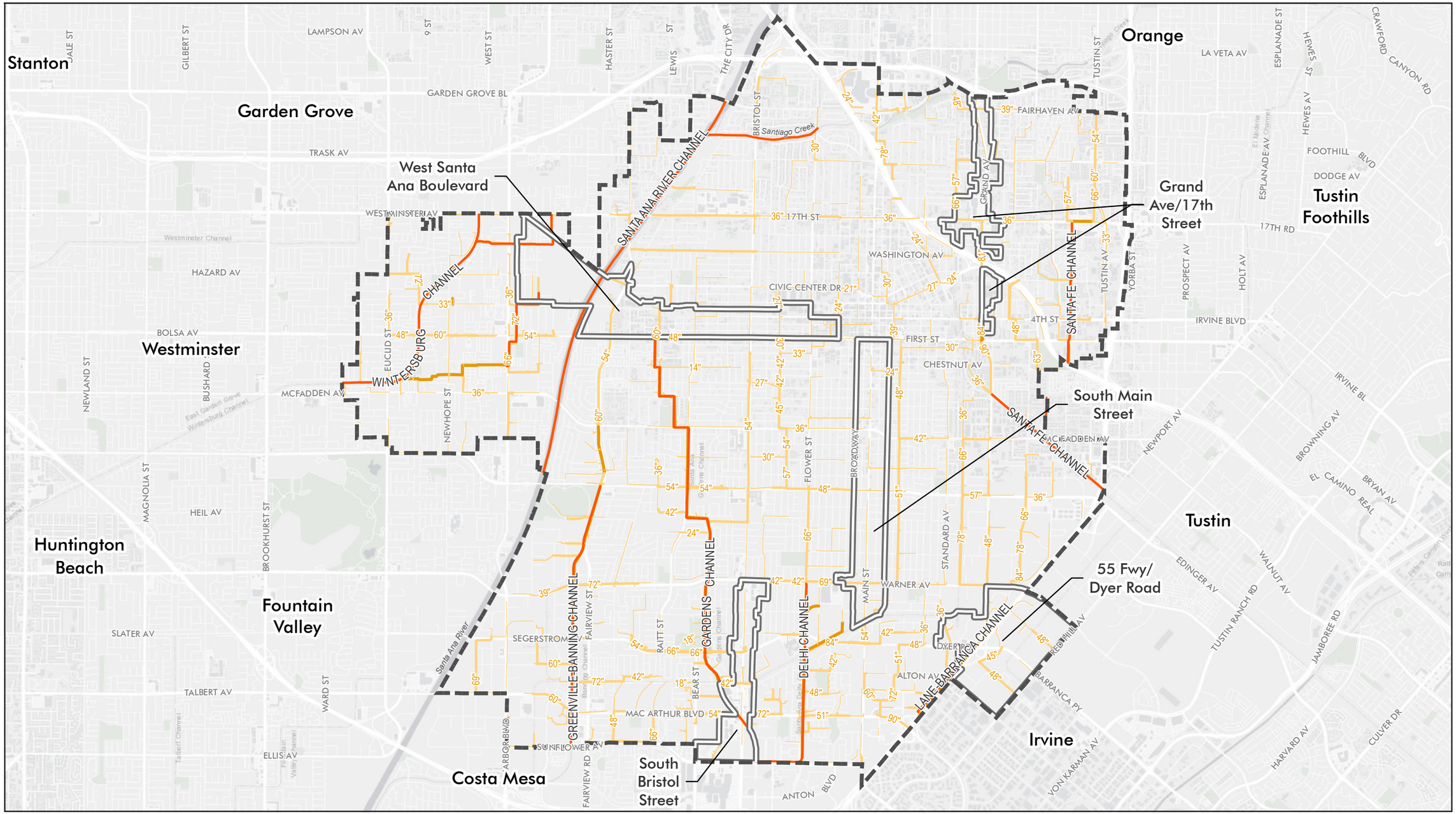
Santa Ana's MPD recommended improvements for each regional watershed in the plan area. Top recommended improvements are shown in Table 5.9-4. The MPD recommends that all improvements be implemented beginning at the most downstream portion of the target area. All recommendations made in the MPD are at a master planning level. For individual projects, specific modeling/analysis may be necessary. Of the 10 improvement projects identified in the MPD, one project (Improvement 7) was included in the 2018/2019 City of Santa Ana Capital Improvement Plan (CIP). Figure 5.9-3, *Existing Storm Drain Recommended Improvements*, illustrates recommended storm drain improvement areas in the city and their associated improvement numbers.

Table 5.9-4 Plan Area Recommended Storm Drain Improvements

Improvement Number	Regional Watershed	Improvement
1	Delhi	Improve County Delhi Channel between Alton and Sunflower
2	Gardens	Improve County Gardens Channel between Edinger and Sunflower
3	Santa Ana	Improve City system along 17th Street between Santa Ana River and west of Flower St
4	Santa Fe	Improve City system along Grand Avenue between Santa Clara and the Santa Fe Channel
5	Santa Fe	Improve City system along Tustin Avenue between 17th Street and the Santa Fe Channel
6	Santa Fe	Improve City system between Macarthur and Sunflower
7	Greenville Banning	Improve City system between Alton and Macarthur connecting to the Lane Channel
8	Santa Ana	Improve City system along Flower between Santa Clara and Santiago Creek
9	Santa Ana	Improve City system along Fairview between Trask and the Santa Ana River
10	Wintersburg	Improve City system along Rosita between Hazard Avenue and the Wintersburg Channel

Source: Fuscoe 2020.

Figure 5.9-2 - Existing Storm Drain System

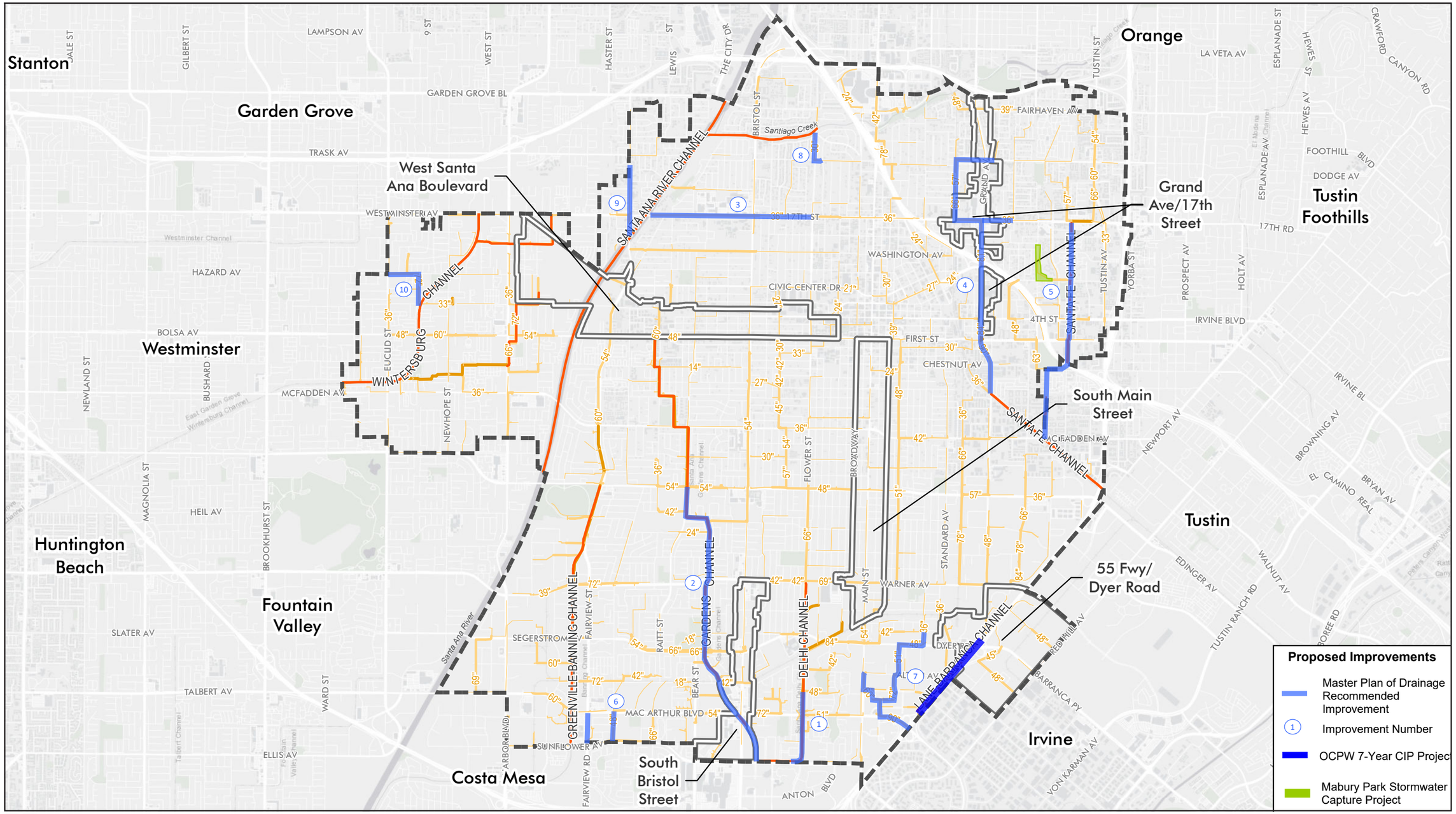


Source: FUSCOE Engineering, 2020

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Figure 5.9-3 - Existing Storm Drain Recommended Improvements



Source: FUSCOE Engineering, 2020

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The 2018/2019 CIP includes a stormwater capture project at Mabury Park. This project includes the construction of a large bioretention basin to slow and treat flows draining into Newport Bay.

In addition, the City provides frequent updates to the status of their CIP projects for sewer, water, and storm drain systems. The following projects are listed on the October–March 2020 CIP quarterly executive summary schedule:

- D-03 Channel Improvements at Alton Ave
- Civic Center Storm Drain Lift Station
- C-5-F channel Repair between Newhope and Harbor
- First Street Undercrossing Stormwater Lift Station
- Warner Avenue Storm Drain Improvements (Ph 1) (Main Street to Oak Street)

The majority of the projects listed above are either going through the design phase or construction phase as of March 2020.

Furthermore, Orange County Public Works' (OCPW) 7-Year Capital Improvement Plan covers OCFCD drainage facilities, road, bridge, flood, and bikeway projects for fiscal years 2019/20 to 2025/26. There was one project in the plan area downstream of the 55 Freeway/Dyer Road focus area in the 2018/19 CIP that is estimated to be concluded in June 2023:

- **Lane Channel (FY 18/19).** Demolish existing damaged concrete-lined channel and replace with channel lining constructed with current design standard criteria.

Flood Hazards

Designated 100-Year Flood Zones

According to the Flood Insurance Rate Map covering the plan area, the majority of the city lies within Zone X. Zone X is designated as areas determined to have minimal flood hazards, areas protected by levee from a 100-year flood, or areas with a 0.2 percent chance of flooding. The western portion of the plan area is protected by levee from flood events or features a 0.2 percent chance of flooding, and the eastern portion features a minimal risk of flooding. There are small areas surrounding the various drainage channels throughout the plan area, including the Delhi Channel, that are listed as Zone A, which represents areas with a 1 percent annual chance of flooding and a 26 percent chance of flooding over the life of a 30-year mortgage. These areas are immediately adjacent to the drainage channels in question, with surrounding developments and neighborhoods protected by levee. The drainage area within and surrounding Santiago Creek, located in the northern portion of the plan area, is listed as both Zone AE and as a Regulatory Floodway. Zone AE represents a 1 percent annual chance of flooding with a base flood elevation. In addition, a small segment of the plan area between the Santa Ana River and the Greenville-Banning Channel is designated as Flood Zone D, representing areas where no flood analysis has been conducted, or where recent incorporation into a larger community has resulted in no map being prepared. See Figure 5.9-4, *City of Santa Ana Flood Zones*, for a map of the FEMA flood zones within the plan area.

Seismically Induced Dam Inundation

Much of the central and western parts of the plan area are in the dam inundation area for Prado and Santiago Creek dams. Small parts of the northern portion of the plan area, north of Fairhaven Memorial Park, are in the dam inundation area for the Santiago Creek dam (see Figure 5.9-5, *Dam Inundation Areas*).

Santiago Creek dam was built in 1933 and is owned and operated by the Serrano Water District and Irvine Ranch Water District. The dam has a capacity of 25,000 acre-feet and is an earthen dam. The dam's downstream hazard is extremely high (DSOD 2019).

The Prado dam and reservoir are owned and operated by the Army Corp of Engineers (Corps) and were constructed in 1941. The dam is in San Bernardino County, approximately two miles west of Corona and on the lower Santa Ana River, approximately 30.5 miles upstream from the confluence with the Pacific Ocean. Prado Dam and Reservoir serves as the principal regulating structure on the Santa Ana River and comprises more than 11,500 acres, out of which 4,100 acres are riparian habitat, 4,823 acres are recreation areas, and 2,400 acres are owned by the Orange County Water District. The Corps owns 9,100 acres in the Basin. The reservoir has a capacity of 217,000 acre-feet (Army Corps of Engineers 2019). The Army Corps of Engineers has characterized Prado Dam as a high urgency risk (Insurance Journal 2019).

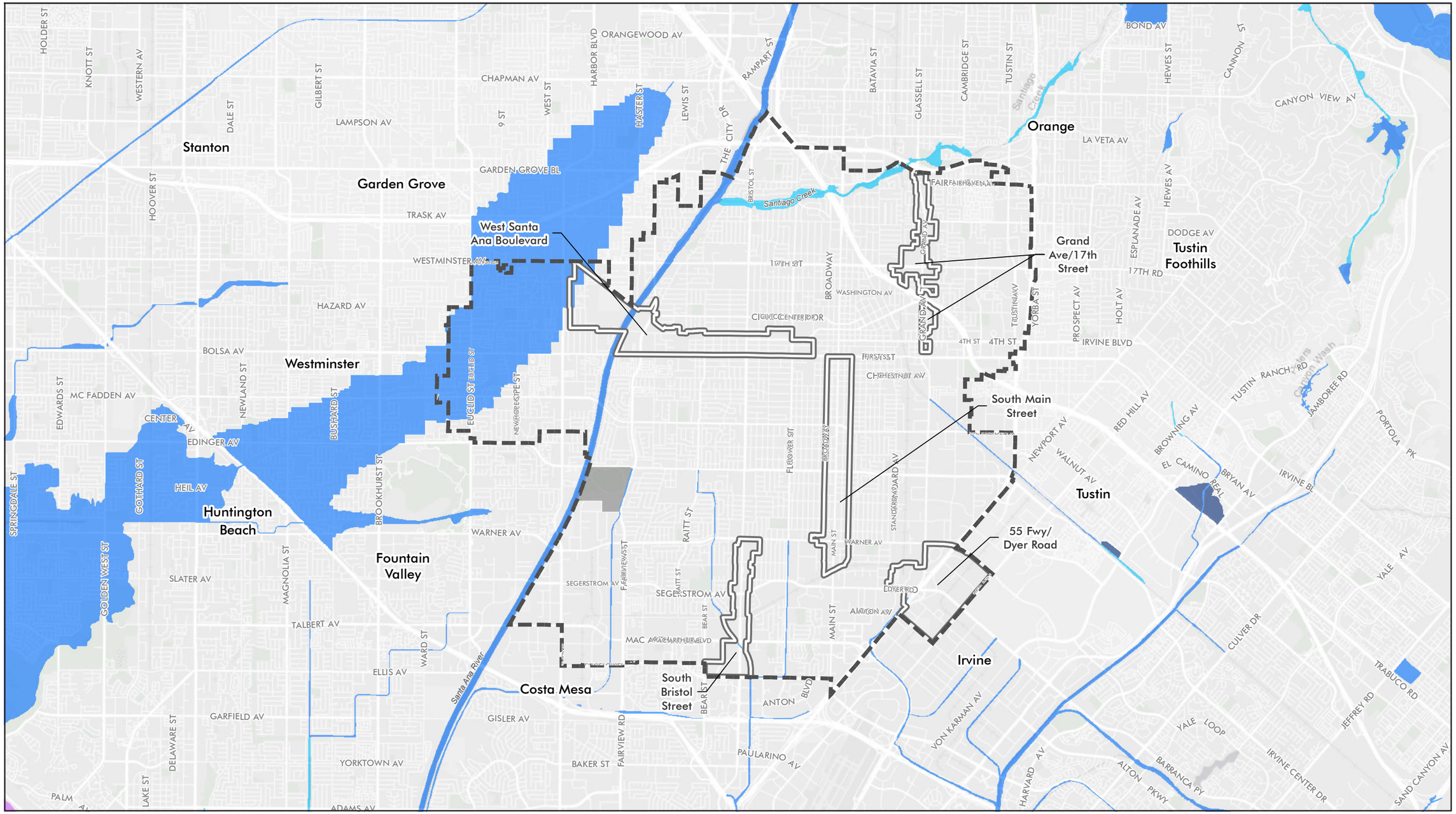
Seiches

A seiche is a surface wave created when an inland water body is shaken, usually by an earthquake or due to a change in atmospheric pressure. Inland water bodies in the plan area that could generate seiches are retention basins and reservoirs and include the Prado Reservoir, Irvine Lake, and the Santiago Creek Recharge Basins.

Tsunami

A tsunami is a series of ocean waves caused by a sudden displacement of the ocean floor, most often due to earthquakes. The plan area ranges in elevation from approximately 210 feet above mean sea level at the northeast corner to 35 feet above mean sea level at the city's southern border. The city is about five miles inland from the Pacific Ocean; therefore, the chances of a tsunami impacting the plan area are negligible.

Figure 5.9-4 - City of Santa Ana Flood Zones

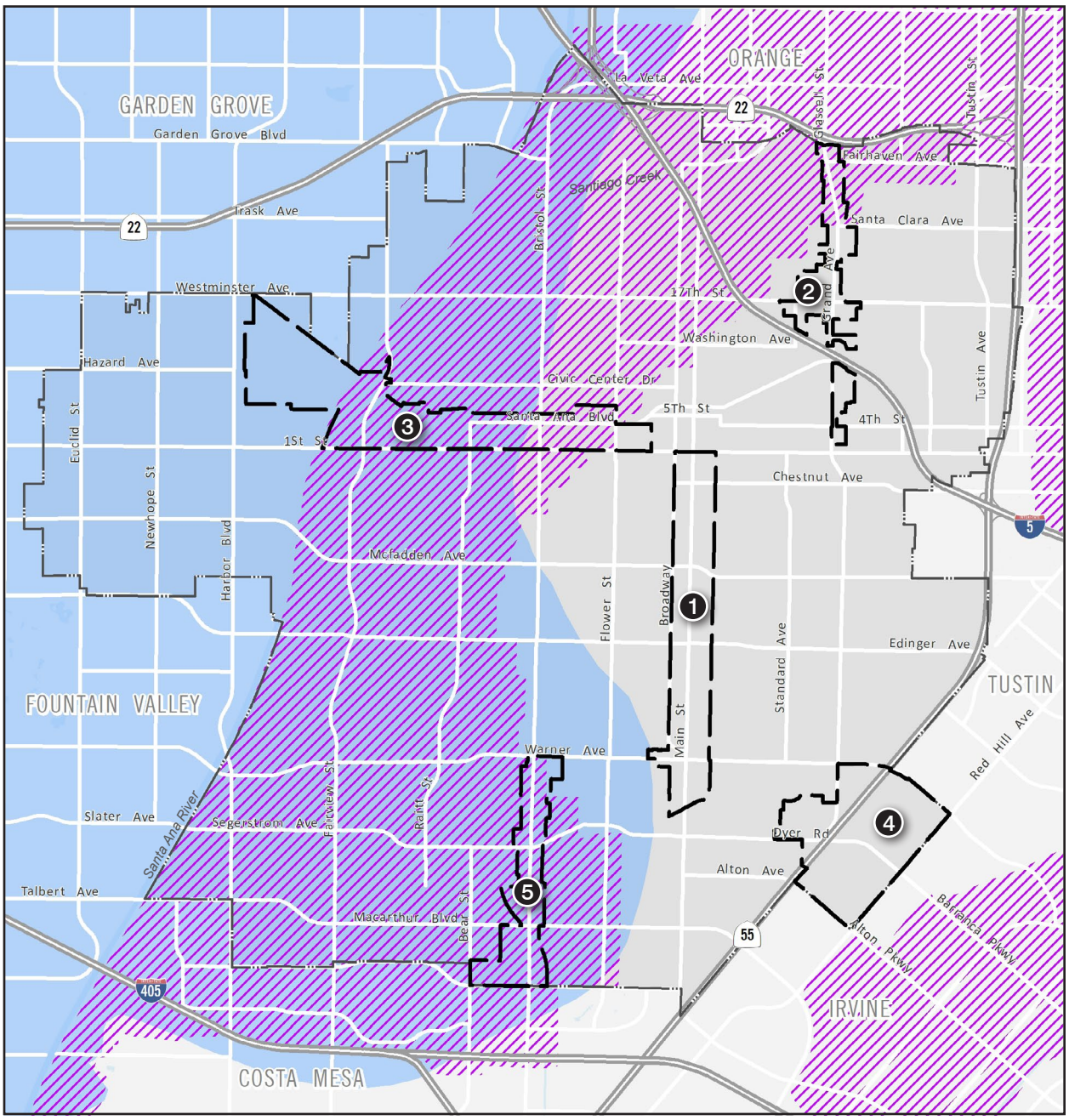


Source: FUSCOE Engineering, 2020

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Figure 5.9-5 - Dam Inundation Areas
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City of Santa Ana

Focus Area

Potential Dam Inundation Area

Santiago Creek Dam

Prado Dam

Focus Areas

1. South Main Street
2. Grand Ave/17th Street
3. West Santa Ana Boulevard
4. 55 Fry/Dyer Road
5. South Bristol Street

0 1
Scale (Miles)

Source: Cal OES, 2017

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5.9.2 Thresholds of Significance

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

HYD-1 Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

HYD-2 Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

HYD-3 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) Result in a 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.

iv) Impede or redirect flood flows.

HYD-4 In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

HYD-5 Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

5.9.3 Regulatory Requirements and General Plan Update Policies

5.9.3.1 REGULATORY REQUIREMENTS

RR-HYD-1 All development pursuant to the General Plan Update shall comply with the requirements of the Construction General Permit (Order No. 2012-0006-DWQ) for stormwater discharges associated with construction activity. Compliance requires filing a Notice of Intent, a Risk Assessment, a Site Map, a Storm Water Pollution Prevention Plan and associated best management practices, an annual fee, and a signed certification statement.

RR-HYD-2 All industrial development pursuant to the General Plan Update shall comply with the requirements of the General Industrial Permit (Order No. CAS000001). The General Industrial Permit regulates operators of facilities subject to stormwater permitting, that discharge stormwater associated with industrial activity.

RR-HYD-3 All development pursuant to the General Plan Update that involve the installation or decommissioning of water wells shall do so in accordance with Section 13751 of the Water Code.

RR HYD-4 All development pursuant to the General Plan Update shall comply with the requirements of the Orange County MS4 Permit (Order R8-2009-0030, NPDES No. CAS618030, as amended by Order No. R8-2010-0062). The MS4 Permit requires new development and redevelopment projects to:

- Control contaminants into storm drain systems
- Educate the public about stormwater impacts
- Detect and eliminate illicit discharges
- Control runoff from construction sites
- Implement best management practices and site-specific runoff controls and treatments for new development and redevelopment

RR HYD-5 All development pursuant to the General Plan Update shall comply with the requirements detailed in Chapter 18 Article IV of the Santa Ana Municipal Code.

RR HYD-6 All development pursuant to the General Plan Update that is located within a floodplain shall comply with the requirements of Chapter 7 of the Santa Ana Municipal Code.

5.9.3.2 GENERAL PLAN UPDATE POLICIES

The following are relevant policies of the Santa Ana General Plan Update, which may contribute to reduce potential impacts to hydrology and water quality.

Public Services Element

- **Policy 3.4 Drainage Facilities.** Expand and maintain storm drain facilities to accommodate the needs of existing and planned development.
- **Policy 3.5 Green Infrastructure.** Incorporate sustainable design and Low Impact Development (LID) techniques for storm water facilities and new development to achieve multiple benefits, including enhancing preserving and creating open space and habitat and improving runoff water quality.

Conservation Element

- **Policy 4.6 Water Quality.** Work with public and private property owners to reduce storm water runoff and to protect the water quality percolating into the aquifer and into any established waterway.

Safety Element

- **Policy 1.1 Regional Collaboration.** Continue to consult with agencies to maintain the most current flood hazard and floodplain information; use the information as a basis for project review and to guide development in accordance with regional, state, and federal standards.
- **Policy 1.3 Storm Drain Infrastructure.** Update the Drainage Master Plan to prioritize improvements to existing system deficiencies, and plan for infrastructure needs that support the General Plan land use vision.
- **Policy 1.4 Critical Infrastructure.** Design, construct, and retrofit critical public facilities and utilities located in flood-prone areas to maintain their structural and operational integrity during floods.
- **Policy 1.5 Flood Awareness.** Promote education of flooding hazards and bring awareness to resources and programs that assist property owners, residents, and businesses to protect their homes and property from flood damage.
- **Policy 1.6 Alternative Flood Control Methods.** Explore and encourage natural flood control infrastructure and techniques that create new open areas to capture storm water, recharge aquifers, prevent flooding, and that expand recreation opportunities.
- **Policy 1.7 Surface Water Infiltration.** Encourage site drainage features that reduce impermeable surface area, increase surface water infiltration, and minimize surface water runoff during storm events on private and public developments.
- **Policy 1.8 Development in Flood Zone.** Continue to implement federal, state, and regional requirements related to new construction in flood plain areas to ensure that future flood risks to life and property are minimized.

5.9.4 Environmental Impacts

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

Impact 5.9-1: Projects pursuant to the General Plan Update would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. [Thresholds HYD 1 and HYD-3 (i)]

Discharges from Construction Sites to Stormwater

Buildout under the General Plan Update will involve soil disturbance, construction, and operation of developed land uses that could generate pollutants affecting stormwater. Buildout will involve construction of about 36,261 housing units and about 5.8 million square feet of nonresidential land uses, compared to existing conditions.

Clearing, grading, excavation, and construction activities associated with the General Plan Update have the potential to impact water quality through soil erosion and increasing the amount of silt and debris carried in runoff. Additionally, the use of construction materials, such as fuels, solvents, and paints, may present a risk to surface water quality. Finally, the refueling and parking of construction vehicles and other equipment on-site during construction may result in oil, grease, or related pollutant leaks and spills that may discharge into the storm drain system.

To minimize these potential impacts, development pursuant to the General Plan Update must comply with the Construction General Permit (CGP) Water Quality Order 2009-0009-DWQ (as amended by Order No. 2010-0014-DWQ and 2012-006-DWQ), which requires the preparation and implementation of a SWPPP. A SWPPP requires the incorporation of BMPs to control sediment, erosion, and hazardous materials contamination of runoff during construction and prevent contaminants from reaching receiving water bodies. The SWRCB mandates that projects that disturb one or more acres of land obtain coverage under the Statewide CGP. The CGP also requires that prior to the start of construction activities, the project applicant must file PRDs with the SWRCB, which includes a Notice of Intent, risk assessment, site map, annual fee, signed certification statement, SWPPP, and post-construction water balance calculations. The construction contractor is always required to maintain a copy of the SWPPP at the site and implement all construction BMPs identified in the SWPPP. Prior to the issuance of a grading permit, the project applicant is required to provide proof of filing of the PRDs with the SWRCB, which includes preparation of a SWPPP. Categories of potential BMPs that would be implemented for this project are described in Table 5.9-5, *Construction BMPs*.

Table 5.9-5 Construction BMPs

Category	Purpose	Examples
Erosion Controls and Wind Erosion Controls	• Use project scheduling and planning to reduce soil or vegetation disturbance (particularly during the rainy season) • Prevent or reduce erosion potential by diverting or controlling drainage • Prepare and stabilize disturbed soil areas	Scheduling, preservation of existing vegetation, hydraulic mulch, hydroseeding, soil binders, straw mulch, geotextile and mats, wood mulching, earth dikes and drainage swales, velocity dissipation devices, slope drains, streambank stabilization, compost blankets, soil preparation/roughening, and non-vegetative stabilization
Sediment Controls	• Filter out soil particles that have been detached and transported in water	Silt fence, sediment basin, sediment trap, check dam, fiber rolls, gravel bag berm, street sweeping and vacuuming, sandbag barrier, straw bale barrier, storm drain inlet protection, manufactured linear sediment controls, compost socks and berms, and biofilter bags
Wind Erosion Controls	• Apply water or other dust palliatives to prevent or minimize dust nuisance	Dust control soil binders, chemical dust suppressants, covering stockpiles, permanent vegetation, mulching, watering, temporary gravel construction, synthetic covers, and minimization of disturbed area
Tracking Controls	• Minimize the tracking of soil offsite by vehicles	Stabilized construction roadways and construction entrances/exits, and entrance/outlet tire wash.

Table 5.9-5 Construction BMPs

Category	Purpose	Examples
Non-Storm Water Management Controls	• Prohibit discharge of materials other than stormwater, such as discharges from the cleaning, maintenance, and fueling of vehicles and equipment. • Conduct various construction operations, including paving, grinding, and concrete curing and finishing, in ways that minimize non-stormwater discharges and contamination of any such discharges.	Water conservation practices, temporary stream crossings, clear water diversions, illicit connection/discharge, potable and irrigation water management, and the proper management of the following operations: paving and grinding, dewatering, vehicle and equipment cleaning, fueling and maintenance, pile driving, concrete curing, concrete finishing, demolition adjacent to water, material over water, and temporary batch plants.
Waste Management and Controls (i.e., good housekeeping practices)	• Manage materials and wastes to avoid contamination of stormwater.	Stockpile management, spill prevention and control, solid waste management, hazardous waste management, contaminated soil management, concrete waste management, sanitary/septic waste management, liquid waste management, and management of material delivery storage and use.

Source: CASQA 2012.

Submittal of the PRDs and implementation of the SWPPP throughout the construction phase of projects pursuant to the General Plan Update will address anticipated and expected pollutants of concern as a result of construction activities. As a result, water quality impacts associated with construction activities would be less than significant.

Discharges from Developed Land Uses (Postconstruction) to Stormwater

With the proposed land use changes, development resulting from the General Plan Update may have long-term impacts on the quality of stormwater and urban runoff, subsequently impacting downstream water quality. Developments can potentially create new sources for runoff contamination through changing land uses. As a consequence, developments in individual focus areas and the city as a whole may have the potential to increase the postconstruction pollutant loadings of certain constituent pollutants associated with the proposed land uses and their associated features, such as landscaping and plaza areas.

To help prevent long-term impacts associated with land use changes and in accordance with the requirements of the City of Santa Ana LIP and consistency with OC Drainage Area Management Plan and Fourth-Term MS4 permit, designated new development and significant redevelopment projects must incorporate LID/site design and source control BMPs to address post-construction stormwater runoff management.

In addition, projects that are identified as priority projects are required to implement site design/LID and source control BMPs applicable to their specific priority project categories, as well as implement treatment control BMPs where necessary. Selection of LID and additional treatment control BMPs is based on the pollutants of concern for the specific project site and the BMP's ability to effectively treat those pollutants, in consideration of site conditions and constraints. Further, both priority and nonpriority projects must develop

a project-specific water quality management plan (WQMP) that describes the menu of BMPs chosen for the project and includes operation and maintenance requirements for all structural and any treatment control BMPs.

Since the GPU does not include a specific or detailed development plan, project-specific WQMP(s) will not be required at this time. Future project-specific WQMPs, preliminary and/or final, will be prepared consistent with the prevailing terms and conditions of the City's LIP, OC Drainage Area Management Plan, and Model WQMP at the time of project application. Moreover, LID and water quality treatment solutions prescribed in project-specific WQMPs shall be designed to support or enhance the regional BMPs and efforts implemented by the City to improve water quality.

Furthermore, as part of the statewide mandate to reduce trash in receiving waters, the City of Santa Ana has been required to adhere to the amended CA Trash TMDL since July 2016. The requirements include the installation and maintenance of trash screening devices at all public curb inlets, grate inlets, and catch basin inlets. The trash screening devices must be approved by the local agency and consistent with the minimum standards of the Trash TMDL. The City of Santa Ana has selected Track 1 as its compliance option. By selecting Track 1, the City has agreed to install, operate, and maintain full capture systems in storm drains that capture runoff from one or more priority land use area.

Additionally, all development pursuant to the General Plan Update shall comply with the requirements of the Santa Ana Municipal Code, which prohibits illicit connections to the storm drainage system and forbids prohibited discharges. All development that discharges stormwater associated with industrial activity shall also comply with the requirements of the General Industrial Permit (Order No. CAS000001). Development pursuant to the General Plan Update that involves the installation or decommissioning of water wells shall do so in accordance with Section 13751 of the Water Code. Therefore, with the implementation of state, regional, and local regulatory requirements, development pursuant to the General Plan Update would not violate any water quality standards or waste discharge requirements or result in a substantial erosion or siltation on- or off-site.

Furthermore, drainage patterns would largely be maintained and would utilize the existing drainage facilities within the public right-of-way. Current runoff is captured and conveyed by existing storm drain infrastructure throughout the city before discharging to County drainage channels and to the Pacific Ocean. The city is built out except for a small number of vacant parcels that are stabilized and will likely be developed under buildout conditions. The majority of streams and channels that drain the city are concrete lined and not susceptible to scour or erosion. For areas that are tributary to streams that may be susceptible to scour, hydromodification requirements as part of the regional MS4 permit will ensure that impacts are minimized. Therefore, overall impacts are less than significant.

Level of Significance Before Mitigation: With the implementation of RR HYD-1 through HYD-5 and Policy 1.7 of the Safety Element, Policy 3.5 of the Public Services Element, and Policy 4.6 of the Conservation Element (as shown under Section 5.9.3.2), Impact 5.9-1 will be less than significant.

Impact 5.9-2: Development pursuant to the General Plan Update would increase the demand on groundwater use but would not impede sustainable groundwater management of the basin. [Threshold HYD-2]

The City of Santa Ana relies on local groundwater resources for approximately 77 percent of its water supply, and the implementation of the Santa Ana GPU has the potential to increase water demand by 6,950 acre-feet per year (AFY). However, the Water Supply and Demand Technical Report showed that the projected water demand from the proposed GPU at buildout is well within the projected total water demand for 2040 in the 2015 urban water management plan for normal, dry year, and multiple dry year scenarios. Therefore, it is not anticipated that implementation of the GPU will exceed projected long-term water supplies. This is further supported by OCWD projections and purchase agreements.

The 2018-19 OCWD Engineer's report provides data on groundwater usage across its service area, including Santa Ana. The total groundwater production for the 2018-19 year was 302,756 acre-feet (AF), which falls within OCWD's sustainable groundwater management goals. Population within OCWD's service area is expected to increase from the current 2.28 million people (based on Census 2010 demographic data) to approximately 2.59 million people by the year 2035. This population growth is expected to increase water demands from the current 393,222 AFY to 447,000 AFY in 2035 (a water demand projection that takes into consideration future water conservation savings). This yields an anticipated increase in water demand of 53,779 AFY. The proposed increase of 6,950 AFY under implementation of the Santa Ana GPU is well within the planned increase in water demands from OCWD projections.

Furthermore, OCWD oversees groundwater recharge and groundwater levels and has multiple mechanisms to prevent groundwater overdraft. The basin is covered by Alternative Plan 8-1, and the groundwater management strategies laid out in the Alternative Plan have been approved by DWR. The Alternative Plan will be updated and resubmitted every five years as part of SGMA requirements. Additionally, because Santa Ana is a built-out city, any proposed land use changes and development will occur within areas that are already built out and will not interfere with groundwater recharge.

Level of Significance Before Mitigation: Impact 5.9-2 will be less than significant.

Impact 5.9-3: Development pursuant to the General Plan Update would increase the amount of pervious surfaces in the plan area, but could substantially increase the rate or amount of surface runoff in some focus areas in a manner which would result in flooding off-site or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems. [Thresholds HYD-3 (ii) and (iii)]

As described in Section 5.9.1.2, the city is largely built out, and there are no major areas that are undeveloped. Therefore, peak flows would be decreased overall due to the implementation of landscaping requirements as well as LID features associated with water quality regulations. These features would increase pervious areas which would decrease stormwater flows. For areas where single-family homes and vacant lots would be redeveloped into higher intensity uses, however, an increase of stormwater runoff peak flow rates could result from the introduction of new impervious surfaces. These are summarized below for the focus areas:

- **West Santa Ana Boulevard Focus Area.** The West Santa Ana Boulevard focus area has some existing single-family residences that are proposed to include the Urban Neighborhood land designation. This could result in increased impervious surfaces in these areas and therefore increase stormwater runoff peak flows. There are some downstream improvements to the Gardens Channel between Edinger and Sunflower in the City's MPD to alleviate some local flooding issues near Thorton Park. These improvements are also listed on the current OCPW 7-year CIP as a qualified future project. Therefore, based on these findings, prioritizing the Gardens Channel improvements may be beneficial to ensure no hydrology impacts result from the future developments proposed under the GPU.

- **Grand Avenue / 17th Street Focus Area.** The Grand Avenue/17th Street focus area also has some existing single-family residences that may be converted to multifamily residences or commercial land uses. This could result in increased impervious surfaces in these areas and therefore increased stormwater runoff peak flows. There are several identified improvements along Grand Avenue between Santa Clara and the Santa Fe Channel within the regional Santa Fe Watershed. The majority of these improvements are to upsize various storm drainpipes to convey the 10-year storm event. Based on these findings, prioritizing the Santa Fe Grand storm drain improvements may be beneficial to ensure no hydrology impacts result from the future developments proposed under the GPU.

- **South Main Street Focus Area.** The South Main Street focus area also has some existing single-family residences that may be converted to multifamily residences or commercial land uses. This could result in increased impervious surfaces in these areas and therefore increased stormwater runoff peak flows. However, City and County policies, as detailed below, would eliminate any potential increase in runoff and the conversion from lower density single family neighborhoods to higher density residential and mixed uses would not result in higher peak flow rates.

- **55 Freeway/Dyer Road Focus Area.** Within the 55 Freeway/Dyer Road focus area are some large vacant parcels that may also result in increases in stormwater runoff once they are developed. The OCPW 7-Year CIP includes the Lane Channel improvements, which entails demolishing and replacing a portion of damaged concrete-lined channel. These improvements are anticipated to be finished in June 2020 and will serve to improve the hydrologic capacity of downstream areas.

- **South Bristol Street Focus Area.** The South Bristol focus area discharges to the Gardens Channel, which is listed for improvement in the Santa Ana MPD. Although this area is not anticipated to have an increase in peak runoff rates due to a likely increase in pervious areas, this improvement project should be considered for prioritization.

The City and County have policies in place for reviewing and permitting new developments. As part of the development process, detailed hydrology studies will be required and, if necessary, on-site detention systems within the development can be required to match existing peak flows, thereby eliminating any potential increase in runoff. Therefore, conversion from lower density single family neighborhoods to higher density residential and mixed uses, which would occur over an extended period, would not result in higher peak flow rates. In addition, the City will continue monitoring its storm drain system for any segments that need immediate improvements and will regularly update its MPD to adequately plan for future drainage needs. OCPW also

updates its CIP each year to ensure regional drainage facilities are functioning. Redevelopment projects under implementation of the GPU will provide additional opportunities for capital improvements.

Furthermore, GPU policies require expanding and maintaining storm drain facilities to accommodate the needs of existing and planned development, updating the Drainage Master Plan to prioritize improvements to existing system deficiencies, and planning for infrastructure needs that support the General Plan land use vision. GPU policies also encourage site drainage features that reduce impermeable surface area, increase surface water infiltration, and minimize surface water runoff on private and public developments during storm events. Therefore, impacts due to development pursuant to the GPU would be less than significant.

Level of Significance Before Mitigation: With the implementation of RR HYD-4 and Policies 1.3, 1.7, 3.4, and 3.5 (as shown under Section 5.9.3.2), Impact 5.9-2 will be less than significant.

Impact 5.9-4: In flood hazard, tsunami, or seiche zones, development pursuant to the General Plan Update would not risk release of pollutants due to project inundation or impede or redirect flood flows. [Thresholds HYD-3 (iv) and HYD-4]

As shown in Figure 5.9-3, none of the focus areas are within the 100-year flood hazard area except the northeast corner of the West Santa Ana Boulevard focus area, which is proposed for low density residential.

It is the City's policy to avoid placing new housing within 100-year flood hazard areas based on FEMA's floodplain maps. Development in these areas is restricted per the City's Municipal Code Chapter 7, Floodplain Management. The floodplain administrator shall approve, conditionally approve, or disapprove all development within the 100-year flood zone based on the determination of whether the following standards are satisfied:

- The proposed development must be consistent with the need to minimize flood damage within the special flood hazard area.
- All public utilities and facilities, such as sewer, gas, electrical, and water systems must be located and constructed to minimize or eliminate flood damage.
- Adequate drainage must be provided to reduce exposure to flood hazards. Within the special flood hazard area, adequate drainage paths around structures on slopes must be provided to guide floodwaters around and away from proposed structures.

The central and eastern portion of the West Santa Ana Boulevard focus area, the southern portion of the Grand Avenue/17th Street focus area, and the entirety of the 55 Freeway/Dyer Road focus area are within the inundation area of the Santiago Creek Dam. Furthermore, the entirety of the 55 Freeway/Dyer Road focus area, and the central and western portions of the West Santa Ana Boulevard focus area are within the dam inundation area of Prado Dam (see Figure 5.9-5).

Dams in California are monitored and inspected annually by the California Division of Safety of Dams (DSOD). In addition, dam owners are required to maintain Emergency Action Plans (EAP) that include procedures for damage assessment and emergency warnings. An EAP identifies potential emergency conditions

at a dam and specifies preplanned actions to help minimize property damage and loss of life should those conditions occur. EAPs contain procedures and information that instruct dam owners to issue early warning and notification messages to downstream emergency management authorities. Santiago Creek dam is certified by DSOD to safely impound water to the elevation associated with the dam's capacity. The dam has been assessed by DSOD to have no existing or potential dam safety deficiencies. Acceptable performance is expected under all loading conditions (static, hydrologic, seismic) in accordance with the applicable regulatory criteria or tolerable risk guidelines (DSOD 2019). Therefore, impacts due to inundation by Santiago Creek dam are less than significant.

Prado Dam operates an EAP in accordance with DSOD's requirements and is governed by the U.S. Army Corps of Engineers' Dam Safety Program to maintain public safety. An integral part of the program is the risk-informed screening process. Dams are classified based upon confirmed or unconfirmed dam safety issues, the combination of life or economic consequences should failure occur, and the probability of failure. This process enables the Corps to prioritize dam safety actions to correct deficiencies, which include interim risk reduction measures to be undertaken while further investigations are conducted, and remedial actions are implemented (Army Corps of Engineers 2012). The Corps has characterized Prado Dam as a high urgency risk. The Corps' assessment of the dam has identified performance concerns that require attention to meet the Corps' rigorous dam safety standards. The dam, which is typically dry, has historically operated without incident. The Corps is working with a national team to reduce the risks associated with the spillway. The agency is implementing interim risk-reduction measures. Modification of the existing spillway is expected to begin in 2021. The dam is also in the process of being modified as part of the larger Santa Ana River Mainstem project. Modification of the dam began in 2002 to provide additional capacity for storage of floodwaters and sediment by enlarging the existing Prado Dam and reservoir. This includes raising the main dam embankment, replacing the outlet works, constructing dikes, and improving the downstream channel. Therefore, impacts due to inundation by Prado Dam are less than significant.

The Prado Reservoir, Irvine Lake, and the Santiago Creek Recharge Basins could generate seiches. A seiche could theoretically occur in these reservoirs as the result of an earthquake or other disturbance, but the flooding impact would be less than for the dam inundation zones. Additionally, the city is about 5 miles inland from the Pacific Ocean; therefore, the chances of a tsunami impacting the plan area are negligible.

As noted in Impact 5.9-2, the City and County regularly maintain and improve storm drain and flood control infrastructure based on priority, and new developments will comply with all pertinent flood control regulation. Furthermore, GPU policies encourage consultation with regional agencies to maintain the most current flood hazard and floodplain information, to use the information as a basis for project review and to guide development in accordance with regional, state, and federal standards. The GPU policies also promote the design, construction, and retrofitting of critical public facilities and utilities located in flood-prone areas to maintain their structural and operational integrity during floods.

Level of Significance Before Mitigation: With the implementation of RR HYD-6 and Policies 1.1, 1.4, 1.5, 1.6, and 1.8 (as shown in Section 5.9.3.2), Impact 5.9-4 will be less than significant.

Impact 5.9-5: Development pursuant to the General Plan Update would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. [Threshold HYD-5]

New development and redevelopment pursuant to the GPU implement the requirements of the CGP, the Orange County MS4 Permit, and Chapter 18 Article IV of the Santa Ana Municipal Code. Furthermore, industrial development and redevelopment would abide by the General Industrial Permit, and well installation or decommissioning will be conducted in accordance with Section 13751 of the Water Code.

Adherence to these regulatory requirements ensure that surface and groundwater quality are not adversely impacted during construction and operation of development pursuant to the GPU. As a result, site development will not obstruct or conflict with the implementation of the Santa Ana River Basin Water Quality Control Plan. Proposed development will be connected to the City's public water supply, and there will be no on-site wells for use of groundwater. The City manages potable and nonpotable supplies to ensure withdrawals from the Orange County Groundwater Basin do not exceed the safe yield for the Basin. As discussed in Impact 5.9-2, increased demand due to development pursuant to the GPU would not adversely impact the sustainable management of the basin. Therefore, the project would not obstruct or conflict with the Basin 8-1 Alternative Plan, and impacts would be less than significant.

Level of Significance Before Mitigation: With the implementation of RR HYD-1 through HYD-5 and Policies 1.7, 3.5, and 4.6 (as shown under Section 5.9.3.2), Impact 5.9-5 will be less than significant.

5.9.5 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and GPU policies, the following impacts would be less than significant: 5.9-1, 5.9-2, 5.9-3, 5.9-4, and 5.9-5.

5.9.6 Mitigation Measures

No mitigation required.

5.9.7 Level of Significance After Mitigation

Impacts 5.9-1, 5.9-2, 5.9-3, 5.9-4, and 5.9-5 are less than significant.

5.9.8 References

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5.10 LAND USE AND PLANNING

This section of the Draft Program Environmental Impact Report (PEIR) evaluates the potential impacts to land use in the City of Santa Ana and its sphere of influence (plan area) from implementation of the Santa Ana General Plan update (GPU). This section is based on the proposed land use plan, described in detail in Chapter 3, *Project Description*, and shown on Figure 3-7, *Proposed General Plan Land Use Plan*. Compatibility of the proposed land use changes with the existing land uses in the surrounding area is discussed in this section. The GPU is also evaluated for consistency with the Southern California Association of Governments' 2020-2045 Regional Transportation Plan / Sustainable Communities Strategy and the Airport Environs Land Use Plan for John Wayne Airport.

Land use impacts can be either direct or indirect. Direct impacts result in land use incompatibilities, division of neighborhoods or communities, or interference with other land use plans, including habitat or wildlife conservation plans. This section focuses on direct land use impacts. Indirect impacts are secondary effects resulting from land use policy implementation, such as an increase in demand for public utilities or services, or increased traffic on roadways. Indirect impacts are addressed in other topical sections of this Draft PEIR.

5.10.1 Environmental Setting

State, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the GPU are summarized below.

State

State Planning Law and California Complete Streets Act

State planning law (California Government Code Section 65300) requires every city in California to adopt a comprehensive, long-term general plan for the physical development of the city and any land outside its boundaries (sphere of influence) that in the planning agency's judgment bears relation to its planning. A general plan should consist of an integrated and internally consistent set of goals and policies that are grouped by topic into a set of elements and are guided by a citywide vision. State law requires that a general plan address eight topics (land use, circulation, housing, conservation, open space, noise, safety, and environmental justice), but allows some discretion on the arrangement and content of the elements. Additionally, each of the specific and applicable requirements in the state planning law should be examined to determine if there are environmental issues in the community that the general plan should address, including hazards and flooding.

On September 30, 2008, Assembly Bill 1358 (AB 1358), the California Complete Streets Act, was signed into law and became effective January 1, 2011. AB 1358 places the planning, designing, and building of complete streets into the larger planning framework of the general plan by requiring jurisdictions to amend their circulation elements to plan for multimodal transportation networks.

The GPU's consistency with state planning law and the California Complete Streets Act is provided in the analysis for Impact 5.10-1.

Regional

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is a council of governments representing Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties. SCAG is the federally recognized metropolitan planning organization (MPO) for this region, which encompasses over 38,000 square miles. SCAG is a regional planning agency and a forum for addressing regional issues concerning transportation, the economy, community development, and the environment. SCAG is also the regional clearinghouse for projects requiring environmental documentation under federal and state law. In this role, SCAG reviews proposed development and infrastructure projects to analyze their impacts on regional planning programs. As the southern California region's MPO, SCAG cooperates with the Southern California Air Quality Management District, the California Department of Transportation (Caltrans), and other agencies in preparing regional planning documents. SCAG has developed regional plans to achieve specific regional objectives. The plans most applicable to the proposed project are discussed below.

The proposed GPU is considered a project of regionwide significance pursuant to the criteria outlined in SCAG's Intergovernmental Review Procedures Handbook (November 1995) and Section 15206 of the California Environmental Quality Act (CEQA) Guidelines, because it is an update to the Santa Ana General Plan, for which an EIR was prepared. Therefore, this section addresses the project's consistency with the applicable regional planning guidelines and policies.

Orange County Council of Governments

The Orange County Council of Governments (COG) represents 35 cities, including Santa Ana. Orange County COG fosters intergovernmental communication and coordination, undertakes comprehensive regional planning with an emphasis on transportation, provides for citizen involvement in the planning process, and supplies technical services to its member governments.

Regional Transportation Plan/Sustainable Communities Strategy

On May 7, 2020, SCAG adopted the 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), also known as Connect SoCal. The RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals. Connect SoCal embodies a collective vision for the region's future and is developed with input from local governments, county transportation commissions, tribal governments, nonprofit organizations, businesses, and local stakeholders in the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. Connect SoCal includes over 4,000 transportation projects—ranging from highway improvements, railroad grade separations, bicycle lanes, new transit hubs and replacement bridges. These future investments were included in county plans developed by the six county transportation commissions and seek to reduce traffic bottlenecks, improve the efficiency of the region's network, and expand mobility choices. In addition, Connect SoCal is supported by a combination of transportation and land use strategies that help the region achieve state greenhouse gas emission reduction goals and federal Clean Air Act requirements, preserve open space areas, improve public health and roadway safety, support vital goods movement industry, and utilize resources more efficiently (SCAG

2020). The proposed project's consistency with the applicable RTP/SCS goals is analyzed in detail in Table 5.10-1, *2020–2045 RTP/SCS Consistency Analysis*.

Orange County Congestion Management Program

In June 1990, Proposition 111 was passed, which made additional funding available for transportation projects through a nine-cent increase in the state gas tax and mandated that each county with 50,000 or more residents develop a congestion management program (CMP). As Orange County's designated Congestion Management Agency, Orange County Transportation Authority (OCTA) is responsible for the conformance monitoring and biennial updating of Orange County's CMP.

Although the passage of AB 2419 (statutes of 1996) provided an opportunity to opt out of the CMP process, OCTA's Board of Directors elected to continue with it because the data help to satisfy federal congestion management plan requirements, and similar efforts were required as part of the Measure M Growth Management Program.

To maintain eligibility for transportation funding, local agencies must submit the following checklists to OCTA by June 30 of every odd year (2011, 2013, etc.) to demonstrate compliance:

- Consistency with Level of Service (LOS) standards.[1]
- Adoption of capital improvement programs.
- Adoption and implementation of a program to analyze the impacts of land use decisions, including an estimate of the costs associated with mitigating those impacts.
- Adoption and implementation of deficiency plans when highway and roadway LOS standards are not maintained. (OCTA 2020)

Airport Environs Land Use Plan for John Wayne Airport

In 1975, the Airport Land Use Commission (ALUC) of Orange County adopted an Airport Environs Land Use Plan (AELUP, amended April 17, 2008) that included John Wayne Airport (JWA), Fullerton Municipal Airport, and the Joint Forces Training Base Los Alamitos. The AELUP is a land use compatibility plan that is intended to protect the public from adverse effects of aircraft noise, to ensure that people and facilities are not concentrated in areas susceptible to aircraft accidents, and to ensure that no structures or activities adversely affect navigable space. The AELUP identifies standards for development in the airport's planning area based on noise contours, accident potential zones, and building heights. An ALUC is an agency authorized under state law to assist local agencies in ensuring compatible land uses in the vicinity of airports. Primary areas of concern for ALUCs are noise, safety hazards, and airport operational integrity. ALUCs are not implementing agencies in the manner of local governments, nor do they issue permits for a project such as those required by local

[1] LOS is a general measure of traffic operating conditions where a letter grade is assigned, from LOS A (no congestion) to F (high levels of congestion). LOS E represents "at capacity" operations. LOS qualitatively measures the operating conditions in a traffic system and how drivers and passengers perceive these conditions.

governments. However, pursuant to California Public Utilities Code Section 21676, local governments are required to submit all general plan amendments and zone changes that occur in the ALUC planning areas for consistency review by ALUC. If the ALUC deems such an amendment or change inconsistent with the AELUP, a local government may override the ALUC decision by a two-thirds vote of its governing body if it makes specific findings that the proposed action is consistent with the purposes stated in Section 21670(a)(2) of the Public Utilities Code:

> ...to protect public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards in areas around public airports to the extent that these areas are not already devoted to incompatible uses.

As shown in Figure 5.8-1, *John Wayne Airport Safety Compatibility Zones*, the southeastern portion of Santa Ana is within Zone 6 (Traffic Pattern Zone) of JWA. This zone generally has a low likelihood of accident occurrence and allows residential use and most nonresidential uses. This zone prohibits outdoor stadiums and similar uses with high noise intensities. Development of children's schools, large day care centers, hospitals, and nursing homes should be avoided in this zone. Additionally, areas within the southeastern portion fall within the 60 dBA CNEL aircraft operation noise contours for JWA (see Figure 5.12-6), and a larger area of the southeastern portion of the city is in the Federal Aviation Regulation Part 77 Obstruction Notification Area of JWA (see Figure 5.8-2, *Height Restrictions per Federal Air Regulations Part 77*).

Local

Current General Plan and Land Use Designations

The current General Plan for the City of Santa Ana consists of 16 elements adopted in separate years between 1982 and 2009. The adopted elements are: airport environs, circulation, conservation, economic development, education, energy, growth management, housing, land use, noise, open space, parks and recreation, public facilities, public safety, scenic corridors, seismic safety, and urban design. Figure 3-6, *Current General Plan Land Use Plan*, shows the land use designations of the current General Plan, and Table 3-2 breaks down current General Plan land use designations in the plan area. As shown on Figure 3-6 and in Table 3-2, 11 land use designations currently regulate development in the city, and the two that cover the most area are Low Density Residential and Industrial.

City of Santa Ana Specific Plans and Overlay Zone

The following areas currently fall under the jurisdiction of specific plans enforced by the City (see Section 3.3.2.4, *Specific Plan/Special Zoning,* and Figure 3-11, *Focus Areas and Special Planning Areas*, in Chapter 3*, Project Description)*:

- MainPlace (SP-4)
- Harbor Mixed Use Transit Corridor (SP-2)
- Bristol Street Corridor (SP-1)
- Midtown (SP-3)

Each specific plan acts as a regulatory document that the City uses as a development guide within that area. The specific plans include detailed development standards and design guidelines.

The City has also adopted the Metro East Mixed-Use overlay zone. An overlay zone is generally defined as a zone or district created for the purpose of conserving natural resources or promoting certain types of development. It is imposed over existing zoning districts and contains provisions in addition to those of the underlying zoning district. The City has also adopted an Adaptive Reuse Project Incentive Area which is an area that is eligible for alternative building standards irrespective of the underlying zoning. In addition, the City has adopted a Transit Zoning Code within a specific development. A specific development is a planning tool that allows for zoning and development standards to be tailored to the unique conditions of a particular site or area. The overlay area, project incentive area, and the Transit Zoning Code are detailed in Chapter 3, *Project Description,* Section 3.3.2.1.

Transit Zoning Code Specific Development

The City adopted a Transit Zoning Code to provide zoning for the integration of new infill development into existing neighborhoods; to allow for the reuse of existing structures; to provide for a range of housing options, including affordable housing; and to provide a transit-supportive, pedestrian-oriented development framework to support the addition of new transit infrastructure. The code encompasses an area in the central urban core of Santa Ana and comprises over 100 blocks and 450 acres. More specifically, it is in the area west of I-5, north of First Street, between Grand Avenue and Flower Street, and south of Civic Center Drive (Santa Ana 2010).

City of Santa Ana Zoning

The zoning code (Chapter 41 of the municipal code) identifies land use categories, development standards, and other general provisions that ensure consistency between the General Plan and proposed development projects. Chapter 41, Article III regulates the location, height, bulk, and size of buildings and structures, and the size of yards and other open spaces for each of the zoning districts.

The zoning designations of the areas within the city's boundaries (see Figure 5.10-1, *Zoning Map*) are defined by the city's zoning map. The zoning map contains various zoning designation, including residential, commercial, industrial, professional, open space, and the specific plan areas mentioned above (Santa Ana 2017). Chapter 41 (Zoning) of the City of Santa Ana Municipal Code provides the basis for current zoning, which is intended to carry out the policies of the current General Plan.

Specific Development

Per Chapter 41, Article III, Division 26 of the municipal code, specific developments (SD) provide classification and development of land as comprehensive special district plans. The SD district is authorized and established for the purpose of protecting and promoting the public health, safety, and general welfare of the city and its residents by:

1) Protecting and enhancing the value of properties by encouraging the use of good design principles and concepts, as related to the division of property, site planning and individual

improvements with full recognition of the significance and effect they have on the proper planning and development of adjacent and nearby properties.

2) Encouraging, securing and maintaining the orderly and harmonious appearance, attractiveness and aesthetic development of structures and grounds in order that the most appropriate use and value thereof be determined and protected.

3) Providing a method whereby specific development plans are to be based on the general plan as well as other regulations, programs, and legislation as may in the judgment of the city be required for the systematic execution of the general plan.

4) Recognizing the interdependence of land values and aesthetics and providing a method to implement this interdependence in order to maintain the values of surrounding properties and improvements and encouraging excellence of property development, compatible with the general plan for, and character of, the city, with due regard for the public and private interests involved.

5) Ensuring that the public benefits derived from expenditures of public funds for improvements and beautification of streets and public facilities shall be protected by exercise of reasonable controls over the character and design of private buildings, structures and open spaces.

Any use or development of property within an SD district shall be in compliance with the ordinance adopting the specific development plan for such property. The City of Santa Ana currently has 95 SD districts.

5.10.1.2 EXISTING CONDITIONS

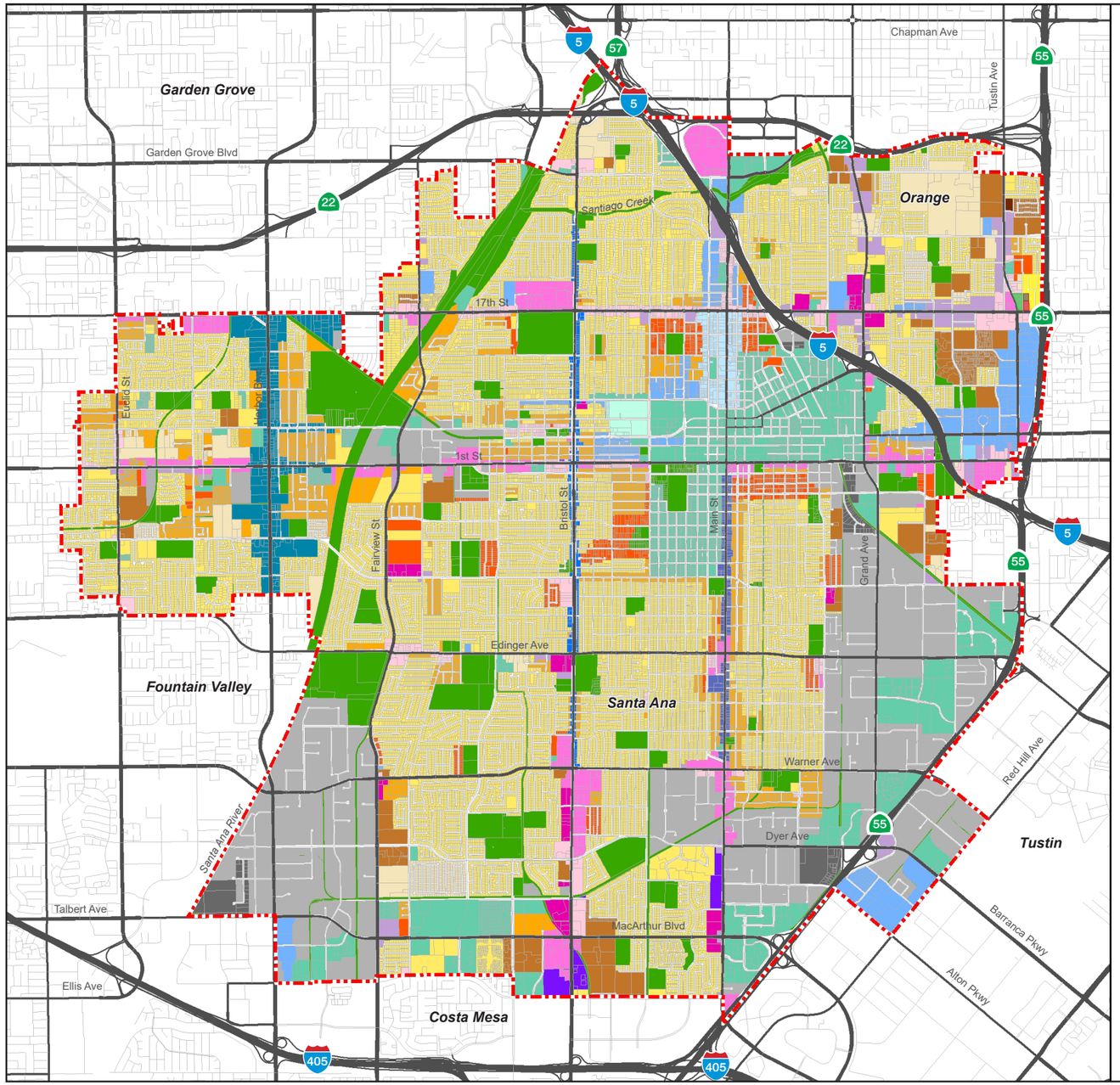
Santa Ana is in the western central part of Orange County, approximately 30 miles southwest of Los Angeles and 10 miles northeast of Newport Beach (see Figure 3-1, *Regional Location*). As shown in Figure 3-2, *Citywide Aerial*, the city is bordered by the city of Orange and unincorporated areas of Orange County to the north, Tustin to the east, Irvine and Costa Mesa to the south, and Fountain Valley and Garden Grove to the west. At the local level, the plan area is generally bounded by State Route 22 on the north and east, and Interstate 405 on the south (see Figure 3-2, *Citywide Aerial*). The Santa Ana River bisects the city from the northeast to the southwest.

The sphere of influence (SOI) of the city consists of a two-mile portion of the Santa Ana River Drainage Channel along the city's westerly border with Fountain Valley (see Figure 3-3, *17th Street Island and Sphere of Influence*).

Existing Land Use

The plan area encompasses approximately 27.5 square miles. As shown in Figure 3-4, *Existing Land Uses*, the plan area has a number of existing land uses, with low density residential, commercial, and industrial making up the majority. Commercial and industrial uses are primarily found along State Route 55, which is a major corridor, and in the southwest corner of the city. Table 3-1, *Existing Land Use Designations and Statistics*, provides a statistical summary of the existing land uses in the plan area.

Figure 5.10-1 - Zoning Map



City of Santa Ana

Zoning Classifications

- A1 General Agricultral
- C1 Community Commercial
- C1-MD Community Commercial-Museum District
- C2 General Commercial
- C4 Planned Shopping Center
- C5 Arterial Commercial
- CR Commercial Residential
- CSM South Main Street Commercial District
- GC Government Center
- M1 Light Industrial
- M2 Heavy Industrial
- O Open Space Land
- OZ1 Metro East Mixed Use Overlay Zone
- P Professional
- R1 Single-Family Residence
- R2 Two-Family Residence
- R3 Multiple-Family Residence
- R4 Suburban Apartment
- RE Residential Estate
- SD Specific Development
- SP1 Bristol Street Corridor Specific Plan
- SP2 Harbor Mixed Use Transit Corridor Specific Plan
- SP3 Midtown Specific Plan

0 1
Scale (Miles)

Source: City of Santa Ana, 2017

5. Environmental Analysis
LAND USE AND PLANNING

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Santa Ana has a several distinct neighborhoods, each distinguished by its history, architecture, housing types, and amenities. More than 60 neighborhood associations have been formed to address neighborhood issues (see Figure 5.4-2, *Neighborhoods Map*). As is common with many communities in Orange County, approximately 70 percent of all residential areas in the city are single-family residential neighborhoods. Many of these neighborhoods are established and well maintained, and several neighborhoods contain state and local historic resources.

Santa Ana has many neighborhoods made up of multiple-family residences—a mixture of single family, townhomes, and apartments—and a combination of industrial and residential uses. The diversity of these neighborhoods is great, and each neighborhood varies widely in condition. The diverse urban and suburban fabric of many of these neighborhoods has been woven over time and reflects the complexity of land use policies implemented over the long history of Santa Ana. The City has undertaken extensive efforts to stabilize residential neighborhoods through appropriate land use direction and housing programs.

To protect and stabilize residential neighborhoods, support the City's economic base, and provide housing for the local workforce, Santa Ana is developing new residential neighborhoods in District Centers close to employment centers. These District Centers include the Metro East Mixed Use Overlay Zone, MacArthur Place, Downtown Santa Ana, City Place, South Coast Metro and similar locations.

Many of the city's land use characteristics are directly related to its historic position as one of Orange County's earliest pioneer settlements. Since Santa Ana was founded in the 19th century, its primary settlement period occurred before the automobile age. Unlike many of its Orange County neighbors, the city's land use patterns mirror both its pre-automobile history as well as its more recent growth. Key land use characteristics include:

- Santa Ana is surrounded by incorporated cities. As a result, its sphere of influence is primarily restricted to its own jurisdictional boundaries. Since the city has very limited vacant land available for development, most new development involves recycling and redevelopment in areas previously improved. The city's central location and its status as a county governmental and employment center are likely to result in continued development pressure.

- The city is the second- largest Orange County city in terms of size, consisting of 27.5 square miles (Santa Ana 2019). Of this total, 50 percent is devoted to residential development, 14 percent to commercial uses, 15 percent to industrial, and 10 percent to public and institutional uses. The city's overall distribution of land use and development reflects its maturity as a commercial, employment, and governmental center.

- Historically, over 6,000 acres of land in Santa Ana was included in one merged redevelopment project area. Further, an 11,790-acre area was designated a California Enterprise Zone, but that designation expired December 13, 2013. The Enterprise Zone provided businesses with tax incentives to promote business development and growth and to create jobs.

- The City of Santa Ana has adopted a number of specific plans to provide greater direction and consistently high-quality development standards for projects in these areas. These specific plans were established for areas of the city that would benefit from a comprehensive development scheme.

- Santa Ana is served by five freeways: the Santa Ana Freeway (I-5), the Garden Grove Freeway (SR-22), the Costa Mesa Freeway (SR-55), the San Diego Freeway (I-405), and the Orange Freeway (SR-57). Planned freeway enhancements and other regional transit improvements further enhance accessibility to the city. Its central location in relation to the regional transportation network contributes to its continued growth and economic vitality.

- Transit in the city consists of OCTA bus service, Southern California Regional Rail commuter and passenger rail service, and Amtrak passenger rail. Due to its central location, grid pattern, and high ridership potential, Santa Ana's role as a transit hub continues to increase. Furthermore, Santa Ana is working with Garden Grove and OCTA to build a fixed guideway system called the OC Streetcar. Expected to begin operations in 2020, the OC Streetcar will link the Santa Ana Regional Transportation Center to a new multimodal hub at Harbor Boulevard/Westminster Avenue in Garden Grove. The rail and streetcar system continue to inform land use decision and development patterns.

Surrounding Land Uses

The plan area is surrounded by developed urban areas, as shown in Figure 3-2, *Citywide Aerial*. It is bordered by residential, institutional (schools), and commercial uses to the north; residential, institutional (schools), industrial, and commercial uses to the east; residential and commercial uses to the south; and residential, commercial, and open space uses to the west.

Prominent development surrounding the city includes the John Wayne Airport to the southeast and Disneyland Park to the northwest. The Tustin Legacy and Irvine Business Complex are both along the southeast boundary of the city. Tustin Legacy is a 1,600-acre planned community in Tustin that includes parks, a commercial retail center, and various densities of housing, with a total of 4,600 units and over nine million square feet of commercial and institutional development. The Irvine Business Complex is approximately 2,800 acres and includes 17,000 dwelling units and 49 million square feet of nonresidential uses. Furthermore, South Coast Plaza, a regional shopping mall in Costa Mesa, is to the south of the city. The shopping center has about 2.8 million square feet of gross leasable area and over 270 stores, making it one of the largest shopping centers in the United States.

5.10.2 Thresholds of Significance

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

LU-1 Physically divide an established community.

LU-2 Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

5.10.3 Regulatory Requirements and General Plan Policies

5.10.3.1 REGULATORY REQUIREMENTS

RR LU-1 Development associated with the General Plan Update would be designed and constructed in accordance with the applicable provisions of Chapter 41 (Zoning) of the City of Santa Ana Municipal Code. Development within specific plan areas, overlay areas, and specific development districts would implement zoning and development standards that are applicable within these subareas in addition to those in the underlying zoning district.

RR LU-2 Eligible buildings in the Project Incentive Area specified in the Adaptive Reuse Ordinance would implement the provisions specified by the ordinance. Residential uses shall be allowed in the Project Incentive Area irrespective of the underlying zoning as part of an approved Adaptive Reuse Project.

RR HAZ-7 Development will be designed and constructed in accordance with the airport environs land use plan (AELUP) for John Wayne Airport. Building height restrictions, as specified in the AELUP, would apply in the city.

5.10.3.2 GENERAL PLAN UPDATE POLICIES

Economic Prosperity Element Appendix B for full list.

Circulation Element

- **Policies 1.1 through 5.9.** Refer to Volume II, Appendix B for full list.

Safety Element

- **Policy 1.2 Climate Change.** Evaluate the need to expand the capacity of flood control facilities to minimize flood hazards to people, property, and the environment based on changing weather conditions associated with climate change.

- **Policy 1.3 Storm Drain Infrastructure.** Update the Drainage Master Plan to prioritize improvements to existing system deficiencies, and plan for infrastructure needs that support the General Plan land use vision.

- **Policy 1.4 Critical Infrastructure.** Design, construct, and retrofit critical public facilities and utilities located in flood-prone areas to maintain their structural and operational integrity during floods.

- **Policy 1.5 Flood Awareness.** Promote education of flooding hazards and bring awareness to resources and programs that assist property owners, residents, and businesses to protect their homes and property from flood damage.

- **Policy 1.6 Alternative Flood Control Methods.** Explore and encourage natural flood control infrastructure and techniques that create new open areas to capture storm water, recharge aquifers, prevent flooding, and that expand recreation opportunities.

Urban Design Element

- **Policy 1.5 Attractive Public Spaces.** Encourage community interaction through the development and enhancement of plazas, open space, people places, and pedestrian connections with the public realm.
- **Policy 1.6 Active Transportation Infrastructure.** Support the creation of citywide public street and site amenities that accommodate and promote an active transportation-friendly environment.
- **Policy 2.6 Preserve Neighborhood Character.** Preserve the character and uniqueness of existing districts and neighborhoods.
- **Policy 2.7 Building and Strengthening Identity.** Collaborate with community stakeholders to strengthen and foster development of community identity and district character through complementary architecture, unique streetscapes, and programming.
- **Policy 3.3 Foster Community Building.** Promote a safe environment that facilitates social interaction and improves active transportation along corridors.
- **Policy 5.4 Intersections for all Travel Modes**. Strengthen active transportation connections and amenities at focal intersections to promote a pleasant and safe experience for non-motorized forms of travel.

Community Element

- **Policy 1.3 Equitable Programs.** Encourage cultural programs and activities of local interest that are inclusive and affordable to all.
- **Policy 1.5 Equitable Recreational Spaces.** Promote the development and use of municipal buildings, indoor facilities, sports fields, and outdoor spaces for recreation that serve residents throughout the City.
- **Policy 3.1 Supporting Health Services.** Collaborate with and provide support to organizations engaged in improving public health and wellness, expanding access to affordable quality health care, and providing medical services for all segments of the community.
- **Policy 3.2 Healthy Neighborhoods.** Continue to support the creation of healthy neighborhoods by addressing public safety, improving the built environment, and maintaining building code standards.
- **Policy 3.3 Healthy Residential Programs.** Invest in programs and public improvements that educate residents about opportunities to increase their physical activity and improve their health.
- **Policy 3.4 Safe Mobility.** Promote the overall safety of multi-modal streets by developing local and regional programs that educate and inform motorists of non-motorized roadway users.
- **Policy 3.5 Community Spaces.** Encourage positive community interactions and neighborhood pride to create secure communities and promote safe public spaces.

- **Policy 3.6 Healthy Options.** Promote access to affordable, fresh, and healthy food options citywide through efforts such as community gardens, culinary classes, and neighborhood farmers markets.

- **Policy 3.7 Active Lifestyles.** Support programs that create safe routes to schools and other destinations to promote walking, biking and active lifestyles.

Conservation Element

- **Policy 1.1 Regional Planning Efforts.** Coordinate air quality planning efforts with local and regional agencies to meet State and Federal ambient air quality standards in order to protect all residents from the health effects of air pollution.

- **Policy 1.2 Climate Action Plan.** Consistency with emission reduction goals highlighted in the Climate Action Plan shall be considered in all major decisions on land use and investments in public infrastructure.

- **Policy 1.3 Education.** Promote efforts to educate businesses and the general public about air quality standards, health effects, and best practices they can make to improve air quality and reduce greenhouse gas emissions.

- **Policy 1.4 Development Standards.** Support new development that meets or exceeds standards for energy-efficient building design and site planning.

- **Policy 1.5 Sensitive Receptor Decisions.** Consider potential impacts of stationary and non-stationary emission sources on existing and proposed sensitive uses and opportunities to minimize health and safety risks.

- **Policy 1.6 New and Infill Residential Development.** Promote development that is mixed-use, pedestrian-friendly, transit oriented, and clustered around activity centers.

- **Policy 1.7 Housing and Employment Opportunities.** Improve the City's jobs/housing balance ratio by supporting development that provides housing and employment opportunities to enable people to live and work in Santa Ana.

- **Policy 1.8 Promote Alternative Transportation.** Promote use of alternate modes of transportation in the City of Santa Ana, including pedestrian, bicycling, public transportation, car sharing programs and emerging technologies.

- **Policy 1.9 Public Investment Alternative Transportation Infrastructure.** Continue to invest in infrastructure projects that support public transportation and alternate modes of transportation in the City of Santa Ana, including pedestrian, bicycling, public transportation, car sharing programs, and emerging technologies.

- **Policy 1.10 Transportation Management.** Continue to support and invest in improvements to the City's Transportation Management System, including projects or programs that improve traffic flow and reduce traffic congestion.

- **Policy 1.11 Public Investment in Low- or Zero Emission Vehicles.** Continue to invest in low-emission or zero-emission vehicles to replace the City's gasoline powered vehicle fleet and to transition to available clean fuel sources such as bio-diesel for trucks and heavy equipment.

- **Policy 1.12 Sustainable Infrastructure.** Encourage the use of low or zero emission vehicles, bicycles, non-motorized vehicles, and car-sharing programs by supporting new and existing development that includes sustainable infrastructure and strategies such as vehicle charging stations, drop-off areas for ride-sharing services, secure bicycle parking, and transportation demand management programs.

- **Policy 1.13 City Contract Practices.** Support businesses and contractors that use reduced-emissions equipment for city construction projects and contracts for services, as well as businesses that practice sustainable operations.

- **Policy 1.14 Transportation Demand Management.** Require and incentivize projects to incorporate Transportation Demand Management (TDM) techniques.

- **Policy 2.1 Native Wildlife Habitat Protection.** Protect and enhance natural vegetation in parks and open spaces for wildlife habitat, erosion control, and to serve as noise and scenic buffers.

- **Policy 2.2 Biodiversity Preservation.** Collaborate with State and County agencies to promote biodiversity and protect sensitive biological resources.

- **Policy 2.3 Resource Management.** Efficiently manage soil and mineral resource operations to eliminate significant nuisances, hazards, or adverse environmental effects on neighboring land uses.

- **Policy 2.4 Scenic Linkages.** Ensure that development and travelways surrounding key destinations, historic sites, recreational areas, and open space preserve and create scenic linkages.

- **Policy 3.3 Development Patterns.** Promote energy efficient-development patterns by clustering mixed use developments and compatible uses adjacent to public transportation.

- **Policy 3.11 Energy-Efficient Transportation Infrastructure.** Continue to support public and private infrastructure for public transportation such as bus routes, rail lines, and the OC Streetcar.

Open Space Element

- **Policy 1.4 Park Connectivity.** Establish and enhance options for residents to access existing and new park facilities through safe walking, bicycling, and transit routes.

- **Policy 1.5 Development Amenities.** Ensure all new development provides open space and effectively integrates pedestrian and multi-modal travelways to promote a quality living environment.

- **Policy 3.2 Linking Development.** Promote bicycle and pedestrian linkages and amenities throughout new and existing development to promote use of alternative modes of transportation and active lifestyles.

- **Policy 3.4 Greenway Corridors.** Coordinate with government and private sector to explore opportunities to incorporate pedestrian, multi-modal, and landscape amenities along the OC Streetcar route, flood control channels, and other underutilized sites.

- **Policy 3.6 Naturalizing the Santa Ana River.** Explore opportunities to reintroduce natural habitat along the Santa Ana River to provide natural habitat and educational and recreational opportunities.

Public Services Element

- **Policy 1.1 Maintenance and Design.** Provide and maintain public facilities that reinforce community identity through high quality design.

- **Policy 1.2 Equitable Distribution.** Ensure public services and facilities reflect changing population needs and are equitably distributed.

- **Policy 1.10 Fair Share.** Require that new development pays its fair share of providing improvements to existing or creation of new public facilities and their associated costs and services.

Land Use Element

- **Policy 1.1 Compatible Uses.** Foster compatibility between land uses to enhance livability and promote healthy lifestyles.

- **Policy 1.2 Homeownership Opportunities.** Support innovative development policies to expand homeownership opportunities at all income levels.

- **Policy 1.3 Equitable Distribution of Open Space.** Promote the creation of new open space and community serving amenities in park deficient areas.

- **Policy 1.5 Diverse Housing Types.** Incentivize quality infill residential development that provides a diversity of housing types and accommodates all income levels and age groups.

- **Policy 1.6 Transit Oriented Development.** Encourage residential mixed-use development, within the City's District Centers and Urban Neighborhoods, and adjacent to high quality transit.

- **Policy 1.7 Active Transportation Infrastructure.** Invest in active transportation connectivity between activity centers and residential neighborhoods to encourage healthy lifestyles.

- **Policy 1.9 Public Facilities and Infrastructure**. Evaluate individual new development proposals to determine if the proposals are consistent with the General Plan, and to ensure that they do not compound existing public facility and service deficiencies.

- **Policy 2.5 Benefits of Mixed Use.** Encourage infill mixed-use development at all ranges of affordability to reduce vehicle miles travelled, improve jobs/housing balance, and promote social interaction.

- **Policy 2.10 Smart Growth.** Focus high density residential in mixed-use villages, designated planning focus areas, Downtown Santa Ana, and along major travel corridors.
- **Policy 3.1 Community Benefits.** Support new development which provides a net community benefit and contributes to neighborhood character and identity.
- **Policy 3.2 Empower Community.** Facilitate community engagement and dialogue in policy decisions and outcomes affecting land use and development.
- **Policy 3.3 Enforcement of Standards.** Maintain a robust and proactive code enforcement program that partners with community stakeholders and is responsive to community needs.
- **Policy 3.4 Compatible Development.** Ensure that the scale and massing of new development is compatible and harmonious with the surrounding built environment.
- **Policy 3.6 Focused Development.** Facilitate the transformation of the transit corridors through focusing medium and high-density pedestrian-oriented mixed-use development at key intersections.
- **Policy 4.2 Public Realm.** Maintain and improve the public realm through quality architecture, street trees, landscaping, and other pedestrian-friendly amenities.
- **Policy 4.5 VMT Reduction.** Concentrate development along high-quality transit corridors to reduce vehicle miles traveled and transportation related carbon emissions.
- **Policy 4.6 Healthy Living Conditions.** Support diverse and innovative housing types that improve living conditions and promote a healthy environment.
- **Policy 4.7 Diverse Communities.** Promote mixed-income developments with mixed housing types to create inclusive communities and economically diverse neighborhoods.

Noise Element

- **Policy 3.1. Residential Development.** Residential development within the John Wayne Airport (JWA) 65 dB(A) CNEL Noise Contour or greater is not supported.
- **Policy 3.2. Flight Paths.** Advocate that future flight path selection be directed away from existing noise sensitive land uses.
- **Policy 3.3. Residential Mitigation.** Require all residential land uses in 60 dB(A) CNEL or 65 dB(A) CNEL Noise Contours to be sufficiently mitigated so as not to exceed an interior standard of 45 dB(A) CNEL.

Housing Element

- **Policy 2.3 Rental Housing.** Encourage the construction of rental housing for Santa Ana's residents and workforce, including a commitment to very low, low, and moderate-income residents and moderate income Santa Ana workers.
- **Policy 2.4 Diverse Housing Types.** Facilitate diverse types, prices, and sizes of housing, including single-family homes, apartments, townhomes, mixed/multiuse housing, transit-oriented housing, multigenerational housing, and live-work opportunities.
- **Policy 2.6 Affordable Component.** Pursuant to the Housing Opportunity Ordinance, require eligible rental and ownership housing projects to include at least 15 percent of the housing units as affordable for lower and moderate-income households.
- **Policy 2.8 Housing Authority-Owned Sites.** Maximize affordable housing on Authority-owned properties that is of high quality, sustainable, and available to various income levels.

5.10.4 Environmental Impacts

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

Impact 5.10-1: Implementation of the General Plan Update would not divide an established community. [Threshold LU-1]

As shown in Figure 3-4, *Existing Land Use*, the plan area comprises a number of existing land uses, with residential, commercial, and industrial making up the majority of land uses. The General Plan Update is intended to guide growth and development (e.g., infill development, redevelopment, and revitalization/restoration) in the plan area through the year 2045 and beyond. The changes in existing land use designations (see Figure 3-6, *Current General Plan Land Use Plan*) that would occur with implementation of the proposed land use plan (see Figure 3-7, *Proposed General Plan Land Use Plan*) would not result in the physical division of an established community.

In general, many areas currently designated General Commercial and Professional Office are expanding opportunities for residential development through a proposed change to the Urban Neighborhood[2] or District Center[3] General Plan land use designations. Industrial Flex[4] would be introduced where Industrial land use

[2] Land types allowed in areas designated as Urban Neighborhood include low density urban neighborhoods with a mix of single and multi-family housing; mixed-use residential with ground floor retail, services, and restaurants; cultural uses; and public and open spaces.

[3] District Centers are to be developed with an urban character that includes a mixture of high-rise office, commercial, and residential uses which provide shopping, business, cultural, education, recreation, entertainment, and housing opportunities.

[4] The Industrial Flex land use designation allows for office/industrial flex spaces, small-scale research and development, and clean manufacturing.

designations currently exist in each of the five focus areas to allow for cleaner industrial and commercial uses with live-work opportunities.

The largest change in residential uses would occur in the 55 Freeway/Dyer Road focus area. Existing land use designations in this focus area include industrial, institutional, general commercial, general office, mixed use, and hotels. As shown in Figure 3-7, the focus area will include District Center (DC), Industrial/Flex (FLEX), and General Commercial (GC) land use designations. The GPU will add 8,731 dwelling units at buildout compared to existing conditions. The proposed land use changes would not divide an established community given that there is a minimal amount of residential uses in this focus area. The land use changes would actually help create a more unified community and help to establish more attractive neighborhoods as future development occurs.

Changes to residential uses would also occur in the South Bristol focus area. Existing land uses include commercial and multifamily uses. GPU land use designations for this focus area include DC and Urban Neighborhood (UN) and would add 5,272 dwelling units at GPU buildout compared to existing conditions. The DC and UN designations would replace current commercial uses and therefore would not divide an established community. Additionally, the change from multifamily residential to UN would still permit residential land uses, although at different density levels than are currently permitted.

For the Grand Avenue/17th Street focus area, existing uses primarily include commercial land uses with very little multifamily and professional office uses. The GPU land use designations include UN and DC. Buildout of the GPU would add 1,722 dwelling units compared to existing conditions. The DC and UN designations would replace current commercial and general office uses and therefore would not divide an established community. The change from multifamily residential to UN and DC land use designations would still permit residential land uses, although at different density levels than are currently permitted.

West Santa Ana Boulevard focus area consists of single-family homes along with open space, and industrial, institutional, commercial, and multifamily residential uses. The GPU would change some commercial and industrial uses into FLEX land use designations, and some industrial uses into UN. Buildout of the GPU would add 1,262 dwelling units compared to existing conditions. All existing residential uses within this focus area would remain residential, although at different density levels than are currently permitted.

In the South Main Street focus area, existing uses include single-family residential uses along with multifamily residential, commercial, institutional, industrial, and office uses. The GPU includes UN land use designations on either side of Main Street down to Warner Avenue and a FLEX land use designation south of Warner Avenue. The rest of the focus area is primarily designated low-density residential and institutional. These uses would fill in behind the UN land use to the east and west boundaries of the focus area. Low-density residential land uses are located and includes the area. Buildout of the GPU would add 588 dwelling units compared to existing conditions. The GPU would not change any residential uses to nonresidential uses and would therefore not divide an established community.

Furthermore, the GPU evolved to concentrate development in new areas to take advantage of mass transit and provide mixed-use opportunities, and the circulation element doesn't introduce any new roadways that would bisect existing communities or neighborhoods. Also, the reclassifications of numerous roadways (see Figure

3.9, *Proposed Arterial Roadway Reclassifications*) to create complete streets with sidewalk and bike path improvements would serve to make existing neighborhoods more cohesive.

Additionally, GPU policies encourage the preservation or enhancement of the existing residential communities through infill development, open space opportunities, and development of compatible uses that would enhance the existing character of Santa Ana. Goal 3 of the land use element aims to preserve and improve the character and integrity of existing neighborhoods and districts. Additionally, Policies 1.1 and 2.10 of the land use element would reduce the conflict between contrasting land uses and enhance neighborhoods by responsibly integrating new development into existing communities. Neighborhood identity and preservation is further encouraged through policies 2.6 and 2.7 of the conservation element. Therefore, implementation of the pertinent policies of the GPU would help ensure the development of cohesive communities while maintaining the features that make each neighborhood unique, and impacts to established communities would be less than significant.

Level of Significance Before Mitigation: With the implementation of Urban Design Policies 2.6 and 2.7 and Land Use Policies 1.1, 2.10, 3.1, 3.2, 3.3, 3.4, and 3.6, Impact 5.10-1 would be less than significant.

Impact 5.10-2: The General Plan Update would be consistent with the Airport Environs Land Use Plan for the John Wayne Airport. [Threshold LU-2]

Airport operations and their accompanying noise and safety hazards require careful land use planning on adjacent and nearby lands to ensure the safety of the residential and business communities of Santa Ana. As shown in Figure 3-2, *Citywide Aerial*, the John Wayne Airport is just outside the plan area's southeastern boundary. A small portion of the southeastern boundary is within JWA's safety compatibility Zone 6, and within the 60 dBA CNEL aircraft operation noise contours (see Figure 5.8-1, *John Wayne Airport Safety Compatibility Zones,* and Figure 5.12-6, *John Wayne Airport Noise Contours*). Furthermore, a larger area of the southeastern portion of the city is in the Federal Aviation Regulation (FAR) Part 77 Obstruction Notification Area of JWA (see Figure 5.8-2, *Height Restrictions per Federal Air Regulations Part 77*).

Airport safety hazards include hazards posed to aircrafts and hazards posed by aircraft to people and property on the ground. With proper land use planning, aircraft safety risks can be reduced, primarily by avoiding incompatible land uses. Table 5.8-1 shows the allowable land uses for each of the airport safety compatibility zones. Zone 6 allows residential use and most nonresidential uses. This zone prohibits outdoor stadiums and similar uses with high noise intensities. As shown in Figure 3-6, *Current General Plan Land Use Plans*, the areas nearest to the airport consist of a mix of industrial, DC, and low-density residential land use designations. Under the proposed General Plan Update, the land use designations of these areas would remain the same. Additionally, these areas are already developed with a mix of residential, commercial, office, and industrial uses, as shown in Figure 3-4, *Existing Land Uses*. New or more intense development in these areas is not anticipated, as the areas are already developed; the majority of development under the GPU is anticipated in the focus areas. Furthermore, the process for filing a project for a consistency determination with the ALUC is specified in Section 4.7 of the AELUP. If the ALUC determines that a submittal is inconsistent with the AELUP, the ALUC shall promptly notify the affected local agency. The local agency may modify the project to be consistent with the AELUP and resubmit the project to the ALUC for a determination of consistency, or choose to overrule the ALUC by following the procedure in Public Utilities Code Sections 21676 and 21676.5. This

procedure requires the local agency to hold a public hearing on the matter by its governing body (e.g., Board of Supervisors, City Council), make specific findings that the proposed overruling is consistent with the purposes stated in Public Utilities Code Section 21670, and overrule the ALUC by at least a two-thirds vote of the governing body of the local agency. Thus, impacts are considered less than significant.

Additionally, elevations in the part of Santa Ana under the Airspace Protection Surface range from 35 feet above mean sea level at the southeast edge of the plan area to 60 feet above mean sea level along the northeast edge of the Airspace Protection Surface. Maximum allowable heights of structures under the Airspace Protection Surface would vary by location. Existing heights of structures in Santa Ana are far below the maximum allowable heights under the Airspace Protection Surface. As set forth in Public Utilities Code Sections 21676 and 21676.5 and as discussed in the California Airport Land Use Planning Handbook, a key responsibility of an airport land use commission is to review particular types of local actions for compliance with the criteria and policies set forth in a commission's adopted compatibility plan. Section 3.0 of the AELUP sets the policies and criteria by which a local action can be reviewed, and a determination of consistency can be made with the AELUP by the ALUC. Projects approved under the proposed GPU would be required to comply with FAA airspace protection regulations using the AELUP consistency determination process. Thus, impacts are considered less than significant.

No helicopters are allowed to land or take off and no heliport or helistop is allowed in residential districts. Heliports are only allowed outside of residential zoning districts with a conditional use permit pursuant to Section 41-621 of the Santa Ana Municipal Code. In addition, any proposed heliports shall undergo review from ALUC, obtain an Airspace Analysis from the FAA as specified in Section 2.1.5 of the AELUP, and confirm consistency with the AELUP prior to construction as specified in Section 4.7 of the AELUP. Therefore, heliport impacts are also less than significant.

Furthermore, as shown in Figure 5.12-6, noise-sensitive land uses could be developed in areas that exceed the 60 dBA CNEL noise, and all residential uses in this area should be protected with additional sound insulation than provided by typical building construction. Noise Element Policies 3.1, 3.2, and 3.3 would require new development within the airport's noise contours to be mitigated to acceptable interior noise levels.

Refer to Sections 5.8, *Hazards and Hazardous Materials*, and 5.12, *Noise,* for further analysis on the proposed project's consistency and potential impacts on the ALUCP for JWA.

Level of Significance Before Mitigation: With the implementation of RR HAZ-7, RR LU-4, and Noise Policies 3.1, 3.2, and 3.3, Impact 5.10-3 would be less than significant.

Impact 5.10-3: Implementation of the General Plan Update would be consistent with the goals of the Southern California Association of Governments' RTP/SCS. [Threshold LU-2]

The SCAG RTP/SCS guides how and where people and goods will travel by identifying both existing and needed transportation facilities, and it sets policies for a wide variety of transportation options and projects for the Southern California region's transportation system. Table 5.10-1 provides an assessment of the GPU's consistency with the RTP/SCS goals. Relevant policies from General Plan Update elements are provided; refer

to Appendix B for a list of all proposed GPU policies. The analysis in the table concludes that the GPU would be consistent with the RTP/SCS goals.

Table 5.10-1 2020–2045 RTP/SCS Consistency Analysis.

RTP/SCS Goal	Consistency Analysis	Relevant General Plan Update Policies
RTP/SCS G1: Encourage regional economic prosperity and global competitiveness	**Consistent:** The General Plan Update promotes economic growth and diversity within the city. The Economic Prosperity Element of the General Plan Update includes policies related to improving Santa Ana's economy and its role within the region.	• Policies 1.1 through 1.10 foster a dynamic local economy that provides and creates employment opportunities for all residents in the city. • Policies 2.1 through 2.11 maintain and enhance the diversity and regional significance of the city's economic base. • Policies 3.1 through 3.11 promote a business-friendly environment where businesses thrive and build on Santa Ana's strengths and opportunities. • Policies 4.1 through 4.6 promote strategies that create an economic development mindset integrated throughout city hall.
RTP/SCS G2: Improve mobility, accessibility, reliability, and travel safety for people and goods	**Consistent:** The circulation element contains policies that provide guidance on improving connectivity for people and goods. The transportation networks in the city would be designed, developed, and maintained to meet the local and regional transportation needs and to maximize efficient mobility and accessibility. Various regional and local plans and programs would be used to guide development and maintenance of transportation networks in the city, including but not limited to: • Santa Ana Vehicle Miles Traveled Analysis Guidelines • OCTA Master Plan of Arterial Highways and Congestion Management Program • Caltrans Traffic Impact Studies Guidelines • Caltrans Highway Capacity Manual • SCAG's 2020 – 2045 RTP/SCS Moreover, according to California Government Code, the City is required to coordinate its circulation element with regional transportation plans, including the RTP/SCS. The proposed circulation element is designed to be a comprehensive guide to transportation management strategies that address the capacity of long-term infrastructure. Refer to Section 5.17, *Transportation*, which addresses local and regional transportation, traffic, circulation, and mobility in more detail. Furthermore, the circulation element establishes policies that address improving travel safety such as emergency access, first/last mile connectivity,	• Policies 1.1 through 1.11 foster a comprehensive and multimodal circulation system that facilitates the safe and efficient movement of people and enhances commerce. • Policies 2.1 through 2.9 promote an integrated system of travelways that connect the city to the region, employment centers, and key destinations. • Policies 3.1 through 3.9 foster a safe, balanced, and integrated system of travelways for nonmotorized modes of transportation. • Policies 5.1 through 5.9 support a transportation system that is safe and supports community, environmental, and conservation goals.

Table 5.10-1 2020–2045 RTP/SCS Consistency Analysis.

RTP/SCS Goal	Consistency Analysis	Relevant General Plan Update Policies
	and bike and pedestrian safety. All modes of public and commercial transit throughout the city would be required to follow safety standards set forth by state, regional, and local regulatory documents. Roadways for motorists must follow safety standards established for the local and regional plans mentioned above. The city's Safe Mobility Plan also promotes safe travel for people and goods.	
RTP/SCS G3: Enhance the preservation, security, and resilience of the regional transportation system.	**Consistent:** Improvements to the existing transportation network must be assessed with some level of traffic analysis in order to determine how proposed developments would impact existing traffic capacities, and to determine the needs for improving future traffic capacities. This is ensured through the permitting process and development review established by the City. Furthermore, the public services and circulation elements of the proposed General Plan Update would encourage regional coordination of transportation issues, as well as provide guidance and policies that help preserve and ensure a resilient regional transportation system.	• Policy 1.10 of the circulation element relates to collaboration between federal, state, SCAG, OCTA, rail authorities, and other agencies to fund and improve the regional transportation system. • Policies 1.1, 1.2, and 1.10 of the public services element promote quality and efficient facilities that are adequately funded, accessible, safe, and strategically located.
RTP/SCS G4: Increase person and goods movement and travel choices within the transportation system.	**Consistent:** Under the Complete Streets Act, general plans of California cities are required to include planning for complete streets: that is, streets that meet the needs of all users of the roadway, including pedestrians, bicyclists, users of public transit, motorists, children, the elderly, and the disabled. The proposed GPU would support the Complete Streets Act as well as the City's Active Transportation Plan, the Central Santa Ana Complete Streets Plan, and the Downtown Santa Ana Complete Streets Plan. Furthermore, the circulation, urban design, conservation, open space, and land use elements promote travel choices within the transportation system.	• Policies 1.1 through 1.11 of the circulation element provide for a comprehensive and multimodal circulation system that facilitates the safe movement of people and promotes a sustainable community. • Policies 2.1 through 2.9 of the circulation element promote an integrated system of travelways comprising of freeways, community rail, the OC street car, transit corridors, and a network of truck routes. • Policies 3.1 through 3.9 of the circulation element foster a safe, balanced, and integrated network of travelways for nonmotorized modes of transportation. • Policies 4.1 through 4.9 of the circulation element support a coordinated transportation planning effort with land use and design strategies that encourage sustainable development and multimodal transportation choices. • Policies 1.5, 1.6, 3.3 and 5.4 of the urban design element encourage pedestrian connections, active-transportation friendly environments, and non-motorized forms of travel. • Policies 1.6, 1.8, 1.9, 1.12, 3.3, and 3.11 of the conservation element promote mixed-use, pedestrian friendly, transit oriented

Table 5.10-1 2020–2045 RTP/SCS Consistency Analysis.

RTP/SCS Goal	Consistency Analysis	Relevant General Plan Update Policies
		development that encourage alternate modes of transportation and an energy-efficient transportation infrastructure. • Policies 1.4, 1.5, 3.2, and 3.4 of the open space element establish multimodal access to park facilities, and enhance bicycle and pedestrian linkages. • Policies 1.6, 1.7, 2.5, 3.6, 4.2, and 4.5 of the land use element encourage transit oriented development, active transportation infrastructure, and concentrated development of high quality transit corridors to reduce vehicle miles traveled.
RTP/SCS G5: Reduce greenhouse gas emissions and improve air quality.	**Consistent:** Implementation of the General Plan Update would introduce policies and actions that address the importance of protecting the health of residents and the environment by improving air quality, reducing greenhouse gas emissions, and encouraging active transportation. The GPU would encourage active transportation, such as bicycling and walking, through policies throughout the GPU elements. Additionally, as shown in Figure 5.16-4, *Bikeway Plan*, the city would be served by future bicycle routes.	• Refer to all policies associated with RTP/SCS G4. • Policies 5.4, 5.6, and 5.9 of the circulation element foster the implementation of green streets, clean fuels and vehicles, and street trees. • Policies 1.1, 1.2, 1.3, 1.4, 1.5, 1.0, 1.11, 1.13, 1.14, and 2.3 of the conservation element relate to coordinating air quality planning efforts to meet state and federal ambient air quality standards, considering the goals of the Climate Action Plan in all major decision on land use and public infrastructure investment, and investing in low to zero emission vehicles. These policies also promote development that meets or exceeds standards for energy-efficient building design, and the consideration of sensitive of potential emission sources on sensitive uses.
RTP/SCS G6: Support healthy and equitable communities.	**Consistent:** The community, land use, and public services elements of the GPU encourage healthy lifestyles, a planning process that ensures that health impacts are considered, and policies and practices that improve the health of residents. The policies also affirm and support a socially and economically diverse community with equitable distribution of resources.	• Policies 3.1 through 3.7 of the community element promote the health and wellness of all Santa Ana residents. Policies 1.3 and 1.4 encourage inclusive and affordable cultural programs and equitable recreational spaces. • Policies 1.1, 1.2, 1.3, 1.5, 1.7, 4.6, and 4.7 of the land use element support diverse development that improve living conditions and promote a healthy, equitable environment. • Policies 2.3, 2.4, 2.6, and 2.8 of the housing element encourage rental housing for all income levels, facilitate diverse types of housing prices and sizes, require affordable housing units, and maximize affordable housing on Authority-owned properties. • Policy 1.2 of the public services element ensures public services and facilities reflect changing population needs and are equitably distributed.

Table 5.10-1 2020–2045 RTP/SCS Consistency Analysis.

RTP/SCS Goal	Consistency Analysis	Relevant General Plan Update Policies
		• Policy 3.3 of the economic prosperity element promotes sustainable and equitable availability of commercial land uses.
RTP/SCS G7: Adapt to a changing climate and support an integrated regional development pattern and transportation network.	**Consistent:** The goal of the GPU's safety element is to eliminate and minimize risks associated with natural and man-made hazards, including climate change. By assessing and preparing for levels of risk, the city can endure the range of safety hazards and adapt to changes over time. The city also values land use decisions that benefit future generations, plans for the impacts of climate change, and incorporates sustainable design practices at all level of the planning process. Additionally, open spaces are used for climate change mitigation and adaption.	• Policies 1.2 through 1.6 of the safety element protect life and minimize property damage and social and economic disruptions caused by climate change.
R**TP/SCS G8:** Leverage new transportation technologies and data-driven solutions that result in more efficient travel.	**Consistent:** Where feasible and consistent with city policy and guidelines, the City improves roadways, enhances intersections, and uses technology to maximize the efficient use of roads. The City's Traffic Management Center is the focal point of traffic signal control and information management through its advanced traffic management system (ATMS). This system is the integration of various intelligent transportation systems such as traffic signal systems, the closed circuit television system, loop-based and video-detection data collection, and the Integrated Traveler Information System. The ATMS allows traffic engineers to collect and monitor real-time traffic conditions, manage traffic flow, and provide an appropriate response in a timely manner.	• Policies 1.3 of the circulation element promotes the use of technology to efficiently move people and vehicles and manage motor vehicle speeds.
RTP/SCS G9: Encourage development of diverse housing types in areas that are supported by multiple transportation options.	**Consistent:** All five focus areas that will experience new growth and development under the GPU meet RTP/SCS Goal 9. The intent of the GPU development in the South Main Street focus area is to transition an auto-dominated corridor into a transit- and pedestrian-friendly corridor through infill development. The Grand Avenue / 17th Street focus area will foster the development of an urban mixed-use corridor connecting into the city's downtown and transit core. For the West Santa Ana Boulevard focus area, the intent is to transition a group of auto-oriented neighborhoods, businesses, and institutions into a series of transit-oriented neighborhoods that support and benefit from future streetcar stops. Furthermore, the 55 Freeway / Dyer Road focus area will transition from a portion of the city that is almost exclusively professional office to one that supports a range of commercial, industrial/flex, and mixed-use development. The intent is to create opportunities for an urban lifestyle with easy access to	• Policy 2.4 of the housing element facilitates diverse types, prices, and sizes of housing, including single-family homes, apartments, townhomes, mixed/multiuse housing, transit-oriented housing, multigenerational housing, and live-work opportunities. • Policies 1.5, 1.6, 2.5, 2.10, 3.6, 4.6, and 4.7 of the land use element support diverse residential mixed-use development adjacent to high quality transit. • Policies 1.6 and 3.3 of the conservation element promote development that is mixed use, pedestrian friendly, and transit oriented.

Table 5.10-1 2020–2045 RTP/SCS Consistency Analysis.

RTP/SCS Goal	Consistency Analysis	Relevant General Plan Update Policies
	Downtown Santa Ana, multiple transit options, and the new investments and amenities in adjacent communities. The South Bristol Street focus area represents Santa Ana's southern gateway and is a part of the South Coast Metro area. Between Sunflower and Alton Avenues, the District Center land use designation will create opportunities to transform auto-oriented shopping plazas to walkable, bike-friendly, and transit-friendly urban villages. Furthermore, the land use, conservation, and housing elements of the GPU include policies that support diverse housing types and areas supported by multimodal transportation.	
RTP/SCS G10: Promote conservation of natural and agricultural lands and restoration of habitats.	**Consistent:** The city does not contain any agricultural lands but does promote the conservation of natural lands and restoration of habitats. The purpose of the open space element is to retain lands that provide value in the form of biodiversity and wildlife conservation. Furthermore, the conservation element identifies the community's natural resources and communicates the benefits for retention, enhancement, and development of these reserves to improve quality of life and the environment as a whole.	• Policy 21. through 2.4 of the conservation element preserve and enhance Santa Ana's natural and environmental resources while maintaining a balance between recreation, habitat restoration, and scenic resources. • Policy 3.6 of the open space element promotes naturalizing the Santa Ana River and exploring opportunities to reintroduce natural habitat along the Santa Ana River to provide natural habitat and educational and recreational opportunities.

Level of Significance Before Mitigation: With the implementation of the policies listed in Table 5.10-1, Impact 5.10-3 would be less than significant.

Impact 5.10-4: Implementation of the General Plan Update would be consistent with the OCTA Congestion Management Plan. [Threshold LU-2]

Orange County CMP intersections in the traffic analysis for the GPU (see Volume III, Appendix K) include:

- Harbor Boulevard and 1st Street
- Harbor Boulevard and Warner Avenue

The Orange County CMP establishes level of service (LOS) E as the minimum level of operation for CMP roadways. Impacts are considered significant if:

- An intersection degrades from an acceptable LOS (LOS E or better) to an unacceptable LOS (LOS F) during the peak hours; or

- The project increases traffic demand at the study intersection by 1 percent of capacity (0.01) if the intersection already operates at an unacceptable level (LOS F).

Table 5.10-2 shows the results of the LOS analysis for the Orange County CMP intersections. As shown in the table, implementation of the GPU does not result in any of the intersections exceeding the LOS thresholds established by the Orange County CMP.

Table 5.10-2 LOS Analysis for CMP Intersections

Intersection Name	Existing LOS	2045 No Project LOS	V/C value[1]	2045 With Project LOS	V/C value[1]	Delta	Significant Impact
Harbor Boulevard and 1st Street	D	C	0.79	C	0.75	-0.04	No
Harbor Boulevard and Warner Avenue	F	F	1.54	F	1.54	0.00	No

Source: IBI 2020.
[1] The V/C ratio value is the observed t traffic volume divided by the saturation flow volume. The intersection V/C values is the sum for the critical movement on each leg, where critical movements are the pairs of conflicting movements with the highest combined V/C values.

In a highly developed urban city, managing traffic congestion along roadways and maintaining an efficient system are essential. Where feasible and consistent with city policy and guidelines, the City would improve roadways, enhance intersections, and use technology to maximize the efficient use of roads. Managing congestion also involves the development of nonmotorized forms of transportation to encourage a shift in the way people get around Santa Ana. In areas with constrained rights-of-way, encouraging alternative forms of travel is essential. Therefore, policy 1.7 of the circulation element promotes the proactive mitigation of the impacts of potential congestion from the transportation network on residents and business. Policy 1.9 ensures the street network is consistent with standards set in the OCTA Congestion Management Program. Furthermore, policy 1.10 of the conservation element supports investing in improvements to the City's transportation management system, including projects or programs that improve traffic flow and reduce traffic congestion.

Level of Significance Before Mitigation: With the implementation of RR LU-1, RR LU-2, Circulation Policies 1.7 and 1.9, and Conservation Policy 1.10, Impact 5.10-6 would be less than significant.

5.10.5 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and GPU policies, the following impacts would be less than significant: 5.10-1, 5.10-2, 5.10-3, and 5.10-4.

5.10.6 Mitigation Measures

No mitigation measures required.

5.10.7 Level of Significance After Mitigation

Impacts are less than significant.

5.10.8 References

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LAND USE AND PLANNING

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5.11 MINERAL RESOURCES

This section of the Draft Program Environmental Impact Report (PEIR) evaluates the potential impacts to mineral resources in the plan area from implementation of the Santa Ana General Plan Update. The information in this section is based largely on:

- *Update of Mineral Land Classification of Portland Cement Concrete Aggregate in Ventura, Los Angeles, and Orange Counties, California*, Open-File Report 94-15, California Division of Mines and Geology, December 21, 1995.

This document is available from the California Geological Survey.

5.11.1 Environmental Setting

Minerals are defined as any naturally occurring chemical elements or compounds formed from inorganic processes and organic substances. Minable minerals, or an "ore deposit," are defined as a deposit of ore or mineral having a value materially exceeding the cost of developing, mining, and processing the mineral and reclaiming the area.

5.11.1.1 REGULATORY BACKGROUND

State

Surface Mining and Reclamation Act

The regulatory setting regarding mineral resources consists of the California Geological Survey Mineral Resources Project, as authorized under the Surface Mining and Reclamation Act of 1975 (SMARA) (California Public Resources Code Sections 2710 et seq.), including designation of "mineral resource zones," described below.

The California Geological Survey Mineral Resources Project provides information about California's nonfuel mineral resources. The Mineral Resources Project classifies lands throughout the state that contain regionally significant mineral resources as mandated by SMARA. Nonfuel mineral resources include metals such as gold, silver, iron, and copper; industrial metals such as boron compounds, rare-earth elements, clays, limestone, gypsum, salt, and dimension stone; and construction aggregate, including sand, gravel, and crushed stone. Development generally results in a demand for minerals, especially construction aggregate. Urban preemption of prime deposits and conflicts between mining and other uses throughout California led to passage of the SMARA, which requires all cities and counties to incorporate in their General Plans the mapped designations approved by the State Mining and Geology Board.

The classification process involves the determination of Production-Consumption (P-C) Regions based on identification of active aggregate operations (Production) and the market area served (Consumption). The P-C regional boundaries are modified to include only the portions of the region that are urbanized or urbanizing and are classified for their aggregate content. An aggregate appraisal further evaluates the presence or absence of significant sand, gravel, or stone deposits that are suitable sources of aggregate. The classification of these

mineral resources is a joint effort of the state and local governments. It is based on geologic factors and requires that the State Geologist classify the mineral resources area as one of the four mineral resource zones, as a scientific resource zone, or as an identified resource area.

- **MRZ-1.** Adequate information indicates that no significant mineral deposits are present or likely to be present.
- **MRZ-2.** Adequate information indicates that significant mineral deposits are present or likely to be present, and development should be controlled.
- **MRZ-3.** The significance of mineral deposits cannot be determined from the available data.
- **MRZ-4.** There is insufficient data to assign any other MRZ designation.
- **Scientific Resource Zone.** Contains unique or rare occurrences of rocks, minerals, or fossils that are of outstanding scientific significance.
- **Identified Resource Area.** Areas identified by the County or California Geological Survey where adequate production and information indicates that significant minerals are present.

As part of the classification process, an analysis of site-specific conditions is used to calculate the total volume of aggregates in individually identified Resource Sectors. Resource Sectors are MRZ-2 areas identified as having regional or statewide significance. Anticipated aggregate demand in the P-C Regions for the next 50 years is then estimated and compared to the total volume of aggregate reserves identified in the P-C Region.

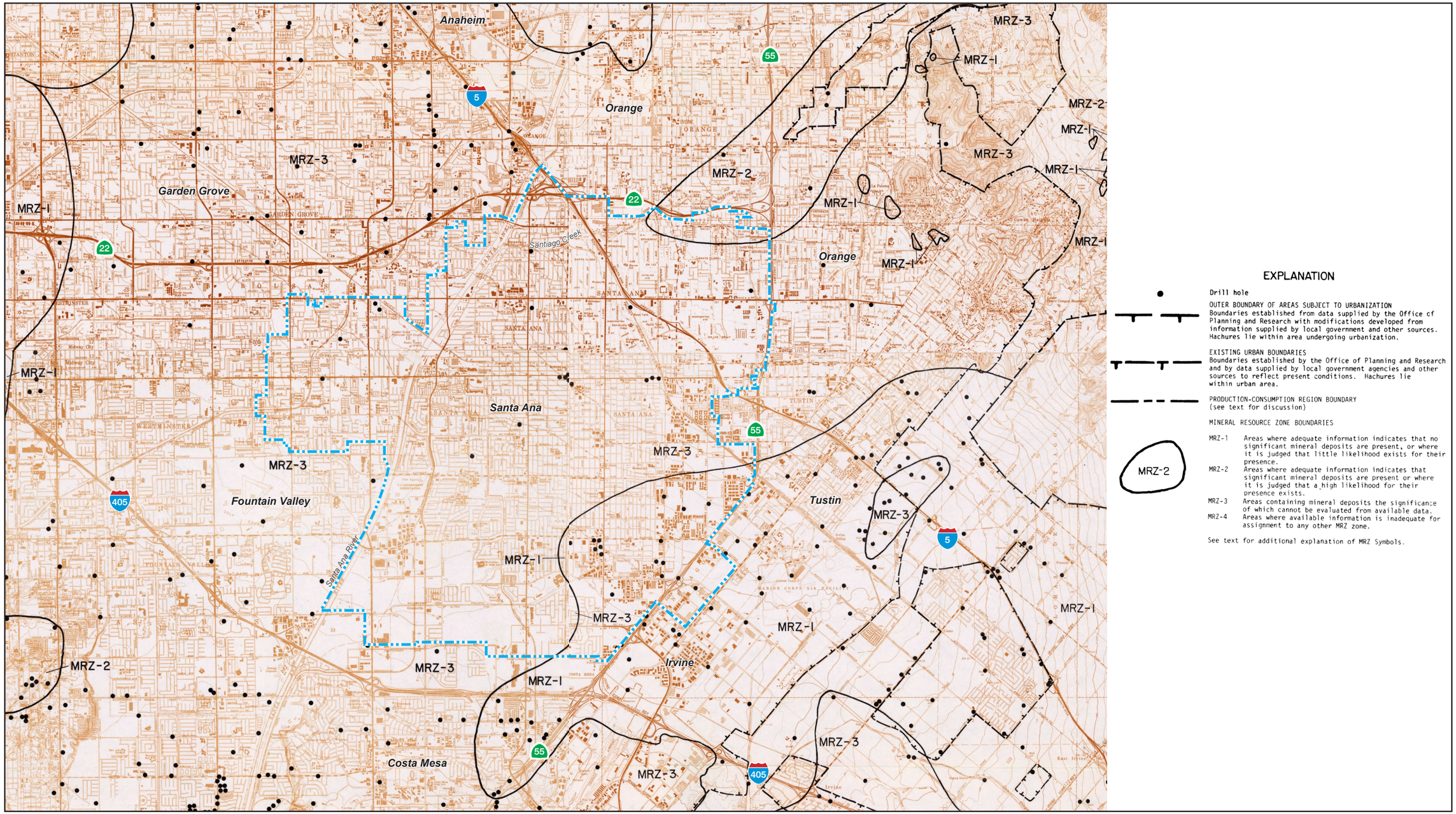
5.11.1.2 EXISTING CONDITIONS

Mineral Resource Zones

The plan area is mostly mapped as MRZ-3, where the significance of mineral deposits cannot be determined from available data. The area in the southeast portion of the city is mapped as MRZ-1, an area where no significant mineral resources are present or there is little likelihood that significant mineral resources are present. A small area in the northeast corner of the city is mapped as MRZ-2, meaning significant mineral resources are known or very likely. This area is the southern tip of the Lower Santiago Creek Resource Area (see Figure 5.11-1, *Mineral Resource Zones*). Areas in the vicinity of the plan area that are designated MRZ-2 are the rest of the Lower Santiago Creek Resource Area and the Santa Ana River Resource Area, 1.5 miles north of the plan area (see Figure 5.11-1, *Mineral Resource Zones*).

The plan area is in the Orange County-Temescal Valley P-C Region, which spans Orange County from Seal Beach to San Onofre; stretches northeast into Riverside County along the Santa Ana River to encompass portions of Norco and Corona; and runs south into upper Temescal Canyon. In addition to serving western Riverside County, it also provides Orange County and northern San Diego County with aggregate exports.

Figure 5.11-1 - Mineral Resource Zones



Source: California Division of Mines and Geology, 1981

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MINERAL RESOURCES

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Known Mineral Resources

Mineral resource sectors are nonurbanized areas judged to contain a significant deposit of construction-quality aggregate that is available—from a general land use perspective—to meet future needs of the region (i.e., 50 years). Mineral resource sectors include areas currently permitted for mining and areas found to have land uses compatible with possible mining. The Orange County-Temescal Valley P-C Region contains a number of resource sectors that the State has designated of "regional significance;" it also has "regionally significant construction aggregate resource areas" in portions of the Santa Ana River within the Prado Basin and behind Mount Rubidoux. Significant aggregate resources also occur south of Corona within and along Temescal Wash and south toward Lake Elsinore. There are no mineral resource sectors in the plan area. The nearest—Sector J of the Lower Santiago Creek Resource Area—is a mile northeast of the plan area (see Figure 5.11-2, *Mineral Resource Sectors*).

Active and Inactive Mines

No active or inactive mines are mapped in the plan area according to the California Office of Mine Reclamation's "Mines Online" website. One inactive sand and gravel quarry, owned by the R.J. Noble Company, is 3.75 miles north of the plan area at 15505 East Lincoln Avenue in Orange (OMR 2012).

Oil Fields and Drilling Operations

Oil fields and drilling operations abound in Newport Beach and Huntington Beach, but Santa Ana is not known to lie above an oil or gas field. Exploratory drilling activities took place from 1924 to 1956 in Santa Ana but did not produce any oil and were later abandoned (Santa Ana 1997)

Aggregate Supplies and Demands, Orange County-Temescal Valley Production-Consumption Region

Aggregate *reserves* are aggregate that has been determined to be acceptable for commercial use, that exists on properties owned or leased by aggregate-producing companies, and for which permits have been granted to allow mining and processing. Aggregate *resources* include reserves as well as all potentially usable aggregate materials that may be mined in the future, but for which no permit has been granted or no marketability has been established. Aggregate resources, reserves, and projected 50-year demands in the Orange County-Temescal Valley P-C Region are listed in Table 5.11-1. As of 2018, aggregate reserves in the Orange County-Temescal Valley P-C Region are projected to be depleted in 41 to 50 years. Annual production of aggregate in the Orange County-Temescal Valley P-C Region for the year 2016 was more than 5 million tons.

Table 5.11-1 Orange County-Temescal Valley P-C Region: Aggregate Resources, Reserves, and Demands

Permitted PCC-Grade Aggregate Reserves	862 million tons
50-Year Demand	1,079 million tons
Estimated Depletion, PCC-Grade Aggregate Reserves	41 to 50 years

Source: CGS 2018.

Permitted aggregate reserves in the Orange County-Temescal Valley P-C Region are 862 million tons, and the projected 50-year aggregate demand is 1,079 million tons; thus, permitted resources are 80 percent of the projected 50-year demand (CGS 2018).

5.11.2 Thresholds of Significance

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a project would normally have a significant effect on the environment if the project would:

M-1 Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

M-2 Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

5.11.3 Regulatory Requirements and General Plan Policies

5.11.3.1 REGULATORY REQUIREMENTS

No existing regulations are applicable to impacts associated with mineral resources.

5.11.3.2 GENERAL PLAN UPDATE POLICIES

The following are relevant policies of the Santa Ana General Plan Update, which may contribute to reducing potential mineral resource impacts.

Conservation Element

- **Policy 2.3 Resource Management.** Efficiently manage soil and mineral resource operations to eliminate significant nuisances, hazards, or adverse environmental effects on neighboring land uses.

5.11.4 Environmental Impacts

5.11.4.1 IMPACT ANALYSIS

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

Impact 5.11-1: Project implementation would not result in the loss of availability of a known mineral resource. [Thresholds M-1 and M-2]

As shown in Figure 5.11-1, *Mineral Resource Zones*, the plan area is mostly mapped as MRZ-3, which is an area where the significance of mineral deposits cannot be determined from available data. The area in the southeast portion of the city is mapped as MRZ-1, which means an area where no significant mineral resources are present or there is little likelihood that significant mineral resources are present. A small area in the northeast

corner of the city is mapped as MRZ-2, which means significant mineral resources are known or very likely. This area is the southern tip of the Lower Santiago Creek Resource Area. Areas in the vicinity of the plan area that are designated MRZ-2 are the rest of the Lower Santiago Creek Resource Area, and the Santa Ana River Resource Area, 1.5 miles north of the plan area.

No mineral resource sectors and active or inactive mines are in the plan area. The nearest mineral resource sector is Sector J of the Lower Santiago Creek Resource Area, located 1 mile northeast of the plan area (see Figure 5.11-2, *Mineral Resource Sectors*). Given that the entire General Plan Update plan area does not have mineral resource sectors and no active or inactive mines, implementation of the proposed project would not cause a loss of availability of known mineral resources.

Implementation of the General Plan Update would increase demand for aggregate, and especially PCC-grade aggregate, in the Orange County-Temescal Valley P-C Region, but would not decrease availability of mineral resources.

Level of Significance Before Mitigation: With the implementation of Conservation Element Policy 2.3, Impact 5.11-1 will be less than significant.

5.11.5 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: Impact 5.11-1.

There are no significant unavoidable adverse impacts relating to mineral resources.

5.11.6 References

CDMG (California Division of Mines and Geology). 1995, December 21. Open File Report 94-15: Update of Mineral Land Classification of Portland Cement Concrete Aggregate in Ventura, Los Angeles, and Orange Counties. California. Part III. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/OFR_94-15/OFR_94-15_Text.pdf.

CGS (California Geological Survey). 2018. Aggregate Sustainability in California Fifty-Year Aggregate Demand Compared to Permitted Aggregate Reserves. http://www.calcima.org/files/MS52_California_Aggregates_Map_201807.pdf.

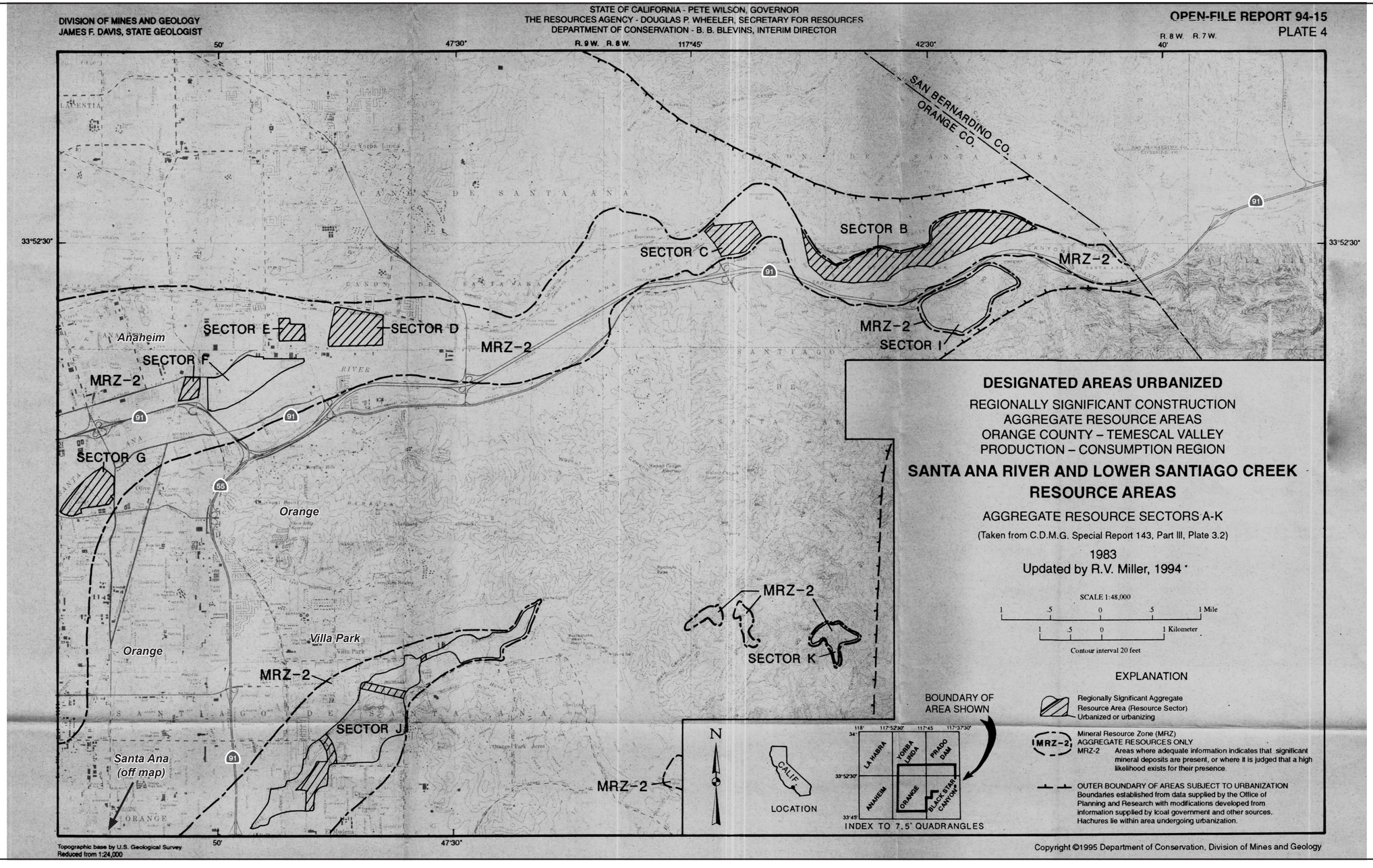
OMR (California Office of Mining Reclamation). 2012. Mines Map. http://maps.conservation.ca.gov/mol/.

Santa Ana, City. 1997, October 16. *Draft Environmental Impact Report for the Land Use Element of the Santa Ana General Plan.*

5. Environmental Analysis
MINERAL RESOURCES

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Figure 5.11-2 - Mineral Resource Sectors



0 1
Scale (Miles)

Source: Department of Conservation, Division of Mines and Geology, 1995

5. Environmental Analysis
MINERAL RESOURCES

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5.12 NOISE

This section of the Draft Program Environmental Impact Report (PEIR) evaluates the potential for implementation of the General Plan Update (GPU) to result in noise impacts in the City of Santa Ana and its sphere of influence (plan area). This section discusses the fundamentals of sound; examines federal, state, and local noise guidelines, policies, and standards; reviews noise levels at existing receptor locations; evaluates potential noise and vibration impacts associated with the GPU; and provides mitigation to reduce noise and vibration impacts at sensitive locations. Noise monitoring and modeling data is included in Volume II, as Appendix I-b to this Draft PEIR.

The analysis in this section is based in part on the following technical report:

- *Santa Ana Noise Existing Conditions Report*, PlaceWorks, July 26, 2019

A complete copy of this study is included in the technical appendices to this Draft PEIR (Appendix I-a).

Glossary

The following are brief definitions of terminology used in this section:

- **Sound:** A disturbance created by a vibrating object, which when transmitted by pressure waves through a medium such as air, is capable of being detected by the human ear or a microphone.
- **Noise:** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB).** A unitless measure of sound on a logarithmic scale.
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Equivalent Continuous Noise Level (L_{eq}).** The mean of the noise level, energy averaged over the measurement period.
- **L_{max}.** The maximum root-mean-square noise level during a measurement period.
- **Statistical Sound Level (L_n).** The sound level that is exceeded "n" percent of time during a given sample period. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period), which is half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the "median sound level." The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the "intrusive sound level." The L_{90} is the sound level exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."

- **Day-Night Sound Level (L_{dn} or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 pm to 7:00 am.

- **Community Noise Equivalent Level (CNEL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the levels occurring during the period from 7:00 pm to 10:00 pm, and 10 dB added to the sound levels occurring during the period from 10:00 pm to 7:00 am. Note: For general community/environmental noise, CNEL and L_{dn} values rarely differ by more than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered to be equivalent/interchangeable and are treated therefore in this assessment.

- **Peak Particle Velocity (PPV)**. The peak rate of speed at which soil particles move (e.g., inches per second) due to ground vibration.

- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

5.12.1 Environmental Setting

5.12.1.1 SOUND FUNDAMENTALS

Sound is a pressure wave transmitted through the air. It is described in terms of loudness or amplitude (measured in decibels), 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 loudness of sound is the decibel (dB). The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all and are "felt" more as a vibration. Similarly, while people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz. Since the human ear is not equally sensitive to sound at all frequencies, a special frequency dependent rating scale is usually used to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by weighting frequencies in a manner approximating the sensitivity of the human ear.

Changes of 1 to 3 dBA are detectable under quiet, controlled conditions and changes of less than 1 dBA are usually indiscernible. A 3 dBA change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dBA is readily discernable to most people in an exterior environment whereas a 10 dBA change is perceived as a doubling (or halving) of the sound.

Noise is defined as unwanted sound, and is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Based on these known adverse effects of noise, the federal government, the State of California, and many local governments have established criteria to protect public health and safety and to prevent disruption of certain human activities.

Sound Measurement

Sound pressure is measured through the A-weighted measure to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies.

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve. On a logarithmic scale, an increase of 10 dBA is 10 times more intense than 1 dBA, 20 dBA is 100 times more intense, and 30 dBA is 1,000 times more intense. A sound as soft as human breathing is about 10 times greater than 0 dBA. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud).

Sound levels are generated from a source and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. This phenomenon is known as "spreading loss." For a single point source, sound levels decrease by approximately 6 dBA for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by on-site operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dBA for each doubling of distance in a hard-site environment. Line source noise in a relatively flat environment with absorptive vegetation decreases by 4.5 dBA for each doubling of distance.

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L_{eq}), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time. Half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the L_2, L_8 and L_{25} values represent the noise levels that are exceeded 2, 8, and 25 percent of the time, or 1, 5, and 15 minutes per hour. These "Ln" values are typically used to demonstrate compliance for stationary noise sources with a city's noise ordinance, as discussed below. Other values typically noted during a noise survey are the L_{min} and L_{max}. These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law and the City require that, for planning purposes, an artificial dBA increment be added to quiet time noise levels in a 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (L_{dn}). The CNEL descriptor requires that an artificial increment of 5 dBA be added to the actual noise level for the hours from 7:00 pm to 10:00 pm and 10 dBA for the hours from 10:00 pm to 7:00 am. The L_{dn} descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 pm and 10:00 pm. Both descriptors give roughly the same 24-hour level (i.e., typically within 1 dBA of each other), with the CNEL being only slightly more restrictive (i.e., higher); therefore, they are used interchangeably in this assessment.

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure, functions of the heart, and the nervous system. Extended periods of noise exposure above 90 dBA can result in permanent hearing damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation becomes painful. This is called the threshold of pain. Table 5.12-1 shows typical noise levels from familiar noise sources.

Table 5.12-1 Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Onset of physical discomfort	120+	
	110	Rock Band (near amplification system)
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at 3 feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: Caltrans 2013a.

Vibration Fundamentals

Vibration is an oscillating motion in the earth. Like noise, vibration is transmitted in waves, but through the earth or solid objects. Unlike noise, vibration is typically of a frequency that is felt rather than heard.

Vibration can be natural—such as earthquakes, volcanic eruptions, or landslides—or man-made, such as explosions, heavy machinery, or trains. Both natural and man-made vibration may be continuous, such as from operating machinery, or impulsive, as from an explosion.

As with noise, vibration can be described by both its amplitude and frequency. Amplitude can be characterized in three ways—displacement, velocity, and acceleration. Particle displacement is a measure of the distance that a vibrated particle travels from its original position; for the purposes of soil displacement, is typically measured in inches or millimeters. Particle velocity is the rate of speed at which soil particles move in inches per second or millimeters per second. Table 5.12-2 presents the human reaction to various levels of peak particle velocity (PPV).

Table 5.12-2 Human Reaction to Typical Vibration Levels

Vibration Level Peak Particle Velocity (in/sec)	Human Reaction	Effect on Buildings
0.006–0.019	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibration begins to annoy people	Virtually no risk of "architectural" (i.e., not structural) damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk to "architectural" damage to normal dwelling—houses with plastered walls and ceilings
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Source: Caltrans 2013b.

Vibrations also vary in frequency, and this affects perception. Typical construction vibrations fall in the 10 to 30 Hz range and usually occur around 15 Hz. Traffic vibrations exhibit a similar range of frequencies; however, due to their suspension systems, buses often generate frequencies around 3 Hz at high vehicle speeds. It is less common, but possible, to measure traffic frequencies above 30 Hz.

The way in which vibration is transmitted through the earth is called propagation. As vibration waves propagate from a source, the energy is spread over an ever-increasing area such that the energy level striking a given point is reduced with the distance from the energy source. This geometric spreading loss is inversely proportional to the square of the distance. Wave energy is also reduced with distance as a result of material damping in the form of internal friction, soil layering, and void spaces. The amount of attenuation provided by material damping varies with soil type and condition as well as the frequency of the wave.

5.12.1.2 REGULATORY BACKGROUND

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, and local governments have established standards and ordinances to control noise.

Federal Regulations

Federal Highway Administration

Proposed federal or federal-aided highway construction projects at a new location, or the physical alteration of an existing highway that significantly changes the horizontal or vertical alignment or increases the number of through-traffic lanes, require an assessment of noise and consideration of noise abatement per 23 CFR Part 772, "Procedures for Abatement of Highway Traffic Noise and Construction Noise." The Federal Highway Administration (FHWA) has adopted noise abatement criteria for sensitive receivers—such as picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals—when "worst-hour" noise levels approach or exceed 67 dBA Leq (Caltrans 2020)

US Environmental Protection Agency

In addition to FHWA standards, the EPA has identified the relationship between noise levels and human response. The EPA has determined that over a 24-hour period, an L_{eq} of 70 dBA will result in some hearing loss. Interference with activity and annoyance will not occur if exterior levels are maintained at an L_{eq} of 55 dBA and interior levels at or below 45 dBA. These levels are relevant to planning and design and useful for informational purposes, but they are not land use planning criteria because they do not consider economic cost, technical feasibility, or the needs of the community; therefore, they are not mandated.

The EPA also set 55 dBA Ldn as the basic goal for exterior residential noise intrusion. However, other federal agencies, in consideration of their own program requirements and goals, as well as the difficulty of actually achieving a goal of 55 dBA Ldn, have settled on the 65 dBA Ldn level as their standard. At 65 dBA Ldn, activity interference is kept to a minimum, and annoyance levels are still low. It is also a level that can realistically be achieved.

US Department of Housing and Urban Development

The US Department of Housing and Urban Development (HUD) has set the goal of 65 dBA Ldn as a desirable maximum exterior standard for residential units developed under HUD funding (This level is also generally accepted within the State of California). Although HUD does not specify acceptable interior noise levels, standard construction of residential dwellings typically provides 20 dBA or more of attenuation with the windows closed. Based on this premise, the interior Ldn should not exceed 45 dBA.

Occupational Health and Safety Administration

The federal government regulates occupational noise exposure common in the workplace through the Occupational Health and Safety Administration (OSHA) under the EPA. Noise limitations would apply to the

operation of construction equipment and could also apply to any proposed industrial land uses. Noise exposure of this type is dependent on work conditions and is addressed through a facility's Health and Safety Plan, as required under OSHA, and is therefore not addressed further in this analysis.

State Regulations

General Plan Guidelines

The State of California, through its General Plan Guidelines, discusses how ambient noise should influence land use and development decisions and includes a table of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable uses at different noise levels, expressed in CNEL (OPR, 2017). A conditionally acceptable designation implies new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use and needed noise insulation features are incorporated in the design. By comparison, a normally acceptable designation indicates that standard construction can occur with no special noise reduction requirements. The general plan guidelines provide cities with recommended community noise and land use compatibility standards that can be adopted or modified at the local level based on conditions and types of land uses specific to that jurisdiction.

California Building Code

The California Building Code (CBC) is Title 24 of the California Code of Regulations. CBC Part 2, Volume 1, Chapter 12, Section 1207.11.2, Allowable Interior Noise Levels, requires that interior noise levels attributable to exterior sources not exceed 45 dBA in any habitable room. The noise metric is evaluated as either the day-night average sound level (Ldn) or the community noise equivalent level (CNEL), whichever is consistent with the noise element of the local general plan.

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

Airport Noise Standards

California Code of Regulations Title 21, Subchapter 6, Airport Noise Standards, establishes 65 dBA CNEL as the acceptable level of aircraft noise for persons living in the vicinity of airports. Noise-sensitive land uses are generally incompatible in locations where the aircraft exterior noise level exceeds 65 dBA CNEL, unless an aviation easement for aircraft noise has been acquired by the airport proprietor or the residence is a high-rise with an interior CNEL of 45 dBA or less in all habitable rooms and an air circulation or air conditioning system, as appropriate. Assembly Bill (AB) 2776 requires any person who intends to sell or lease residential properties in an airport influence area to disclose that fact to the person buying the property.

Local Regulations

City of Santa Ana Municipal Code

Chapter 18, Article VI, Noise Control, of the municipal code provides criteria for ambient noise measurements as well as noise standards for residential, school, hospital, and church uses. When non-transportation (stationary) noise is the noise source of concern, the City applies performance standards from Section 18.312 of the municipal code to ensure that noise producers do not adversely affect noise-sensitive land uses. Table 5.12-3, *Exterior Noise Standards*, summarizes the City's exterior noise standards.

Table 5.12-3 Exterior Noise Standards

Time Period	Noise Level (dBA)				
	L_{50}	L_{25}	L_8	L_2	L_{max}
7:00 am–10:00 pm	55	60	65	70	75
10:00 pm–7:00 am	50	55	60	65	70

Source: City of Santa Ana Municipal Code.
Note: A 5 dBA penalty shall be applied in the event of an alleged offensive noise such as impact noise, simple tones, speech, music, or any combination of thereof. If the measured ambient level exceeds any of the first four noise limit categories, the allowable noise exposure standard shall be increased to reflect the ambient noise level. If the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under this category shall be increased to reflect the maximum ambient noise level.

Construction

The City of Santa Ana's noise ordinance exempts noise from construction activities that occur during the daytime. No construction is permitted outside of the hours in Section 18-314(e) of the Santa Ana Municipal Code, which restricts construction activities to the daytime hours of 7:00 am to 8:00 pm Monday through Saturday.

Vibration

The City of Santa Ana does not have specific limits or thresholds for construction vibration. The Federal Transit Administration (FTA) provides criteria for acceptable levels of groundborne vibration for various types of buildings. Structures amplify groundborne vibration; wood-frame buildings, such as typical residential structures, are more affected by ground vibration than heavier buildings. The level at which groundborne vibration is strong enough to cause architectural damage has not been determined conclusively, but the standards recommended by the FTA are shown in Table 5.12-4.

Table 5.12-4 Building Architectural Damage Limits

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

Source: FTA 2018.

5.12.1.3 EXISTING CONDITIONS

Ambient Noise Measurements

To determine a baseline noise level at different environments in the planning area, ambient noise monitoring was conducted by PlaceWorks in May of 2019. Measurements were made during weekday periods during peak morning and evening traffic hours, 7:00 am to 10:00 am and 3:00 pm to 7:00 pm. Long-term (24-hour) measurements were conducted at 5 locations, and short-term (15-minute) measurements were conducted at 16 locations in the plan area. All measurements were conducted Monday, May 13, through Wednesday, May 15, 2019.

The primary noise sources around the measurements were traffic, aircraft overflights, and rail noise. Commercial, industrial and government operations, and urban and rural activity noise (such as dogs barking and birds chirping) also contributed to the overall noise environment at some locations in the planning area. Meteorological conditions during the measurement periods were favorable for outdoor sound measurements and were noted to be typical for the season. Noise measurement locations are shown in Figure 5.12-1, *Approximate Noise Monitoring Locations*.

Ambient Noise Monitoring Results

During the ambient noise survey, the CNEL noise levels at monitoring locations ranged from 69 to 80 dBA CNEL. The long-term noise measurement results are summarized in Table 5.12-5, and a graphical summary of the daily trend during long-term noise measurements is provided in Appendix I-b. The short-term noise measurement results are summarized in Table 5.12-6.

Table 5.12-5 Long-Term Noise Measurements Summary (dBA)

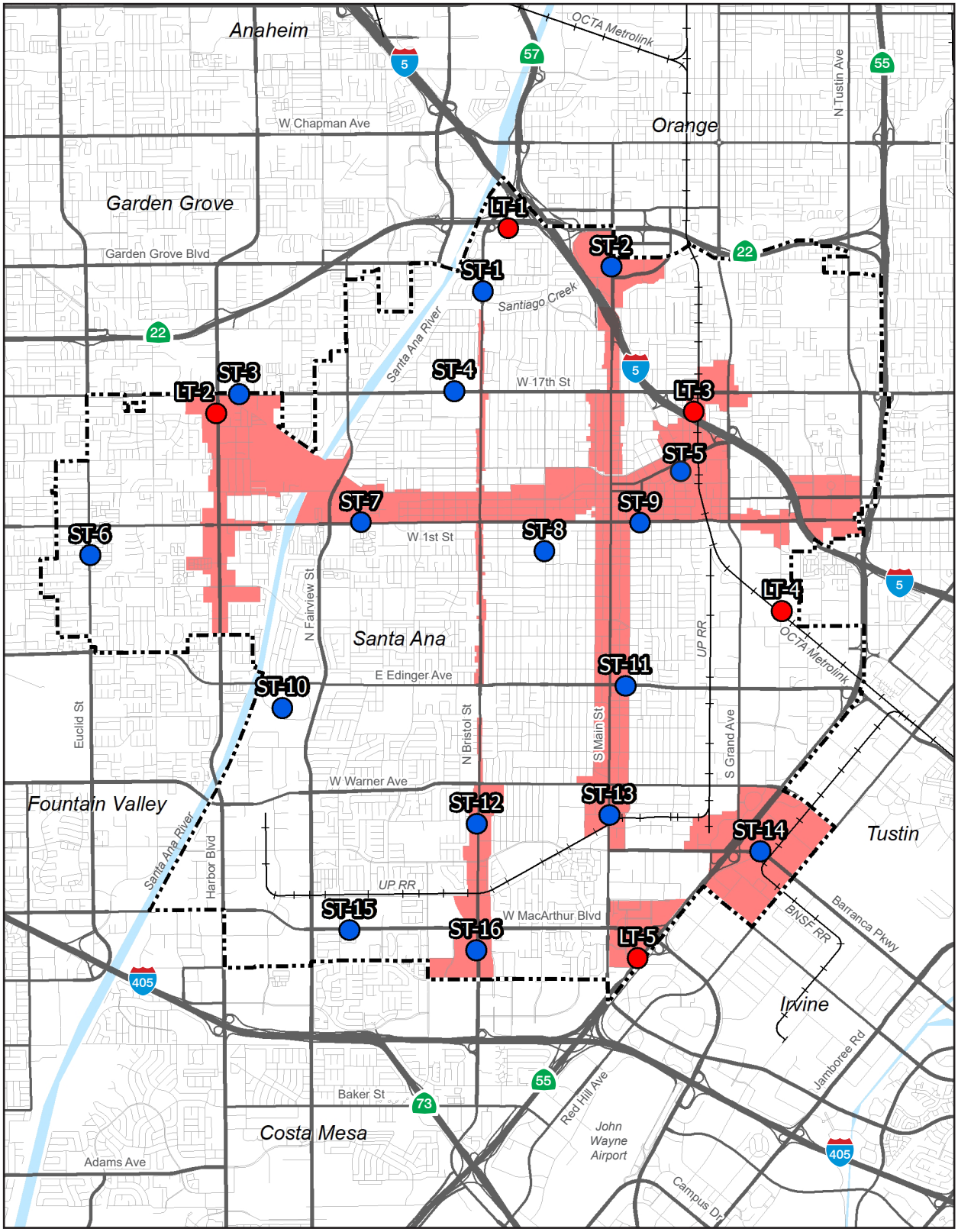
Monitoring Location	Description	CNEL	Lowest Leq, 1-hr	Highest Leq, 1-hr
LT-1	2944 Fernwood Drive	69	56.5	72.9
LT-2	1406 N Harbor Boulevard	78	64.8	79.0
LT-3	1507 North Fairmont Street	73	58.6	73.4
LT-4	Normandy and Lyon Street	79	52.9	78.4
LT-5	7 Hutton Center Drive, east of Double Tree Hotel	80	66.4	77.5

Table 5.12-6 Short-Term Noise Measurements Summary (dBA)

Monitoring Location	Description	15-minute Noise Level, dBA						
		L_{eq}	L_{max}	L_{min}	L_2	L_8	L_{25}	L_{50}
ST-1	Bristol Street south of Park Lane ≈ 45 ft east of NB centerline 7:17 AM, 5/14/2019	78.5	87.9	62.4	83.5	82.1	79.8	77.5
ST-2	Main Street north of Memory Lane ≈ 35 ft west of SB centerline 7:54 AM, 5/14/2019	73.2	82.6	52.5	79.9	77.9	75.0	69.4
ST-3	Westminster near Nautilus Drive ≈ 42 ft north of WB centerline 4:59 PM, 5/14/2019	70.1	89.0	55.1	77.3	73.1	70.5	67.5
ST-4	17th Street west of Bristol Street ≈ 37 ft south of EB centerline 3:16 PM, 5/14/2019	73.3	90.9	51.2	79.6	77.2	74.5	70.5
ST-5	Santiago Street, Near Santa Ana Regional Transportation Center ≈ 30 ft west of SB centerline 8:29 AM, 5/14/2019	65.0	79.8	50.4	73.3	69.6	64.1	60.1
ST-6	Near 330 Euclid Street ≈ 45 ft west of SB centerline 5:58 PM, 5/14/2019	76.9	87.6	60.7	83.3	80.7	77.8	74.9
ST-7	Near 2335 1st Street ≈ 45 ft north of WB centerline 4:03 PM, 5/14/2019	73.6	87.5	59.0	80.5	77.3	74.3	71.6
ST-8	412 Flower Street ≈ 45 ft west of SB centerline 9:36 AM, 5/14/2019	68.7	80.2	48.3	75.9	73.7	70.0	64.7
ST-9	1st Street near Maple Street ≈ 40 ft south of EB centerline 8:59 AM, 5/14/2019	75.5	88.3	59.4	82.3	80.1	76.6	71.8
ST-10	Centennial Regional Park 3:19 PM, 5/15/2019	54.6	73.5	46.1	60.9	57.4	54.2	52.0
ST-11	Near 218 Edinger Street ≈ 40 ft north of WB centerline 4:03 PM, 5/15/2019	72.2	87.2	49.7	78.5	76.1	73.3	70.4
ST-12	Near 2620 South Bristol Street ≈ 40 ft west of SB centerline 8:49 AM, 5/15/2019	69.8	88.0	53.2	75.9	73.6	70.8	67.1
ST-13	Near 2519 Main Street ≈ 42 ft west of SB centerline 9:27 AM, 5/15/2019	70.8	80.7	51.0	77.1	75.2	72.4	68.9
ST-14	Near 1821 Dyer Street ≈ 42 ft north of WB centerline 4:41 PM, 5/15/2019	70.0	83.9	56.8	77.3	74.1	70.8	65.4
ST-15	Near 2500 MacArthur Boulevard ≈ 45 ft south of EB centerline 7:31 AM, 5/15/2019	76.4	84.3	59.3	81.8	80.5	78.0	75.0
ST-16	Near 3650 South Bristol Street ≈ 55 ft west of SB centerline 8:11 AM, 5/15/2019	76.1	86.9	55.2	82.3	80.5	78.0	73.1

Notes: ft = feet, NB = northbound, SB = southbound, EB = eastbound, WB = westbound

Figure 5.12-1 - Approximate Noise Monitoring Locations



Source: PlaceWorks, 2020; ESRI, 2019

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Summary of Ambient Noise Monitoring

The noise environment in the plan area varies with location. However, freeway, rail, and local roadway traffic noise tend to dominate the noise environment, with the exception of ST-10 (Centennial Park) and ST-8 (412 Flower Street). The majority of Centennial Park is set back from adjacent roadways, and Flower Street is a lower-capacity roadway.

Existing Traffic Noise

On-road vehicles are the most prominent source of noise in the plan area. Figures 5.12-2 through 5.12-5 illustrate the modeled roadways and existing noise contours for 60 dBA CNEL, 65 dBA CNEL, and 70+ dBA CNEL. Appendix I-b contains the inputs and outputs used in existing traffic noise modeling.

Aircraft Noise

Aircraft noise is typically characterized as "occasional" throughout the plan area but can be intrusive to nearby sensitive receptors. There is one airport in Santa Ana, John Wayne Airport, whose noise contours are shown in Figure 5.12-6, *John Wayne Airport Noise Contours*. John Wayne Airport services commercial and private aircraft.

John Wayne Airport participates in a noise abatement program as part of California Airport Noise Standards and generates quarterly reports of long-term CNEL dB values. The noise abatement program has 10 noise monitoring sites (NMS) within the airport's neighboring cities, and one of them, NMS-9N, is at 1300 S Grand Avenue in Santa Ana.

Railroad Noise

Railroad operations are also a substantial source of noise in some parts of the plan area. Day-night average noise levels vary throughout the city depending on the number of trains per day along a given rail line, the timing and duration of train pass-by events, and whether or not trains must sound their warning whistles near "at-grade" crossings. Noise levels commonly range from 65 to 75 dBA CNEL at land uses adjoining a railroad right-of-way. When trains approach a passenger station or at-grade crossing, they are required to sound their warning whistle within a quarter mile. Train warning whistles typically generate maximum noise levels of 105 to 110 dBA at 100 feet. The day-night average noise level at locations immediately adjacent to at-grade crossings and exposed to multiple train pass-by events per day can exceed 85 dBA Ldn/CNEL.

There are several crossings in Santa Ana that are designated "quiet zones"—from 4th Street north to Santa Clara Avenue. In these locations, trains are not required to sound their warning whistle (though still may if the conductor deems it necessary for safety reasons). Table 5.12-7 contains the calculated distances to the 65 dBA CNEL contours from existing railroad noise, both from the main line and within a quarter mile of grade crossings where horn warnings are required. The noise contours are displayed graphically in Figures 5.12-2 through 5.12-5.

Table 5.12-7 Existing Railroad Noise Levels

Operator	Subdivision	Distance (feet) to 65 dBA CNEL Contour (Main Line)	Distance (feet) to 65 dBA CNEL Contour (Within ¼ Mile of Grade Crossing)
BNSF	Irvine Industrial Lead	20	266
UP	Santa Ana Industrial Lead	30	361
SCRRA	Orange Subdivision	210	978

Source: Calculated using the FTA CREATE Model and FRA Grade Crossing Horn Model. See Appendix I-b.

Stationary Source Noise

Stationary sources of noises occur on all types of land uses. Residential uses generate noise from landscaping, maintenance activities, and air conditioning systems. Commercial uses generate noise from heating, ventilation, and air conditioning (HVAC) systems; loading docks; and other sources. Industrial uses may generate noise from HVAC systems, loading docks, and possibly machinery. Noise generated by residential or commercial uses is generally short and intermittent. Industrial uses may generate noise on a more continual basis. Nightclubs, outdoor dining areas, gas stations, car washes, fire stations, drive-throughs, swimming pool pumps, school playgrounds, athletic and music events (such as at the Santa Ana Stadium), and public parks are other common noise sources.

Existing Vibration

Commercial and industrial operations in the plan area can generate varying degrees of ground vibration, depending on the operational procedures and equipment. Such equipment-generated vibrations spread through the ground and diminish with distance from the source. The effect on buildings in the vicinity of the vibration source varies depending on soil type, ground strata, and receptor-building construction. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. In addition, future sensitive receptors could be placed within close proximity to existing railroad lines through buildout in the plan area.

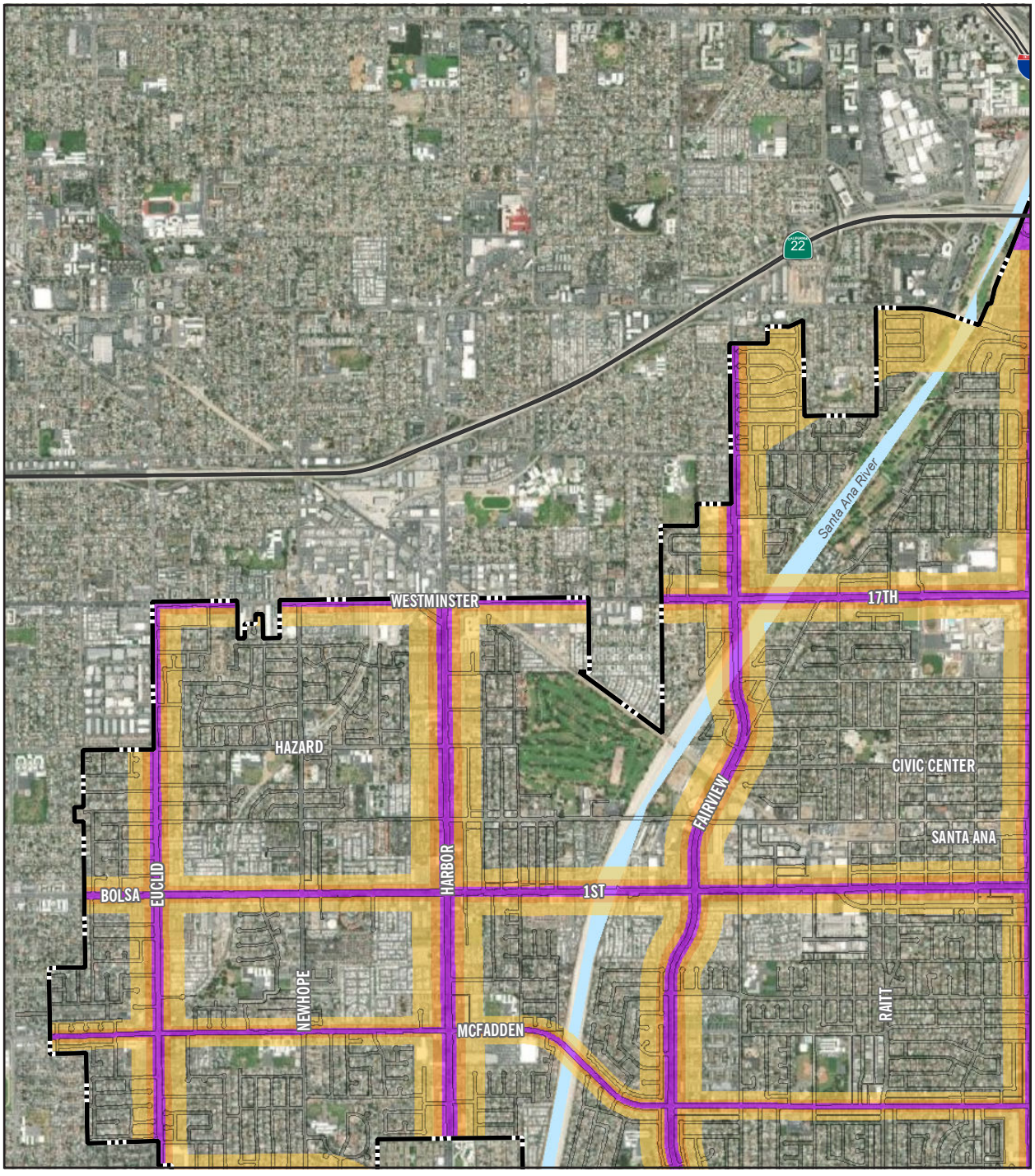
5.12.2 Thresholds of Significance

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a project would normally have a significant effect on the environment if the project would result in:

N-1 Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

N-2 Generation of excessive groundborne vibration or groundborne noise levels.

Figure 5.12-2 - Existing Transportation CNEL Noise Levels (Northwest Quadrant)



City of Santa Ana
City of Santa Ana SOI
Railway

Existing Noise Contour

70+ dBA
65 dBA
60 dBA



Key Map

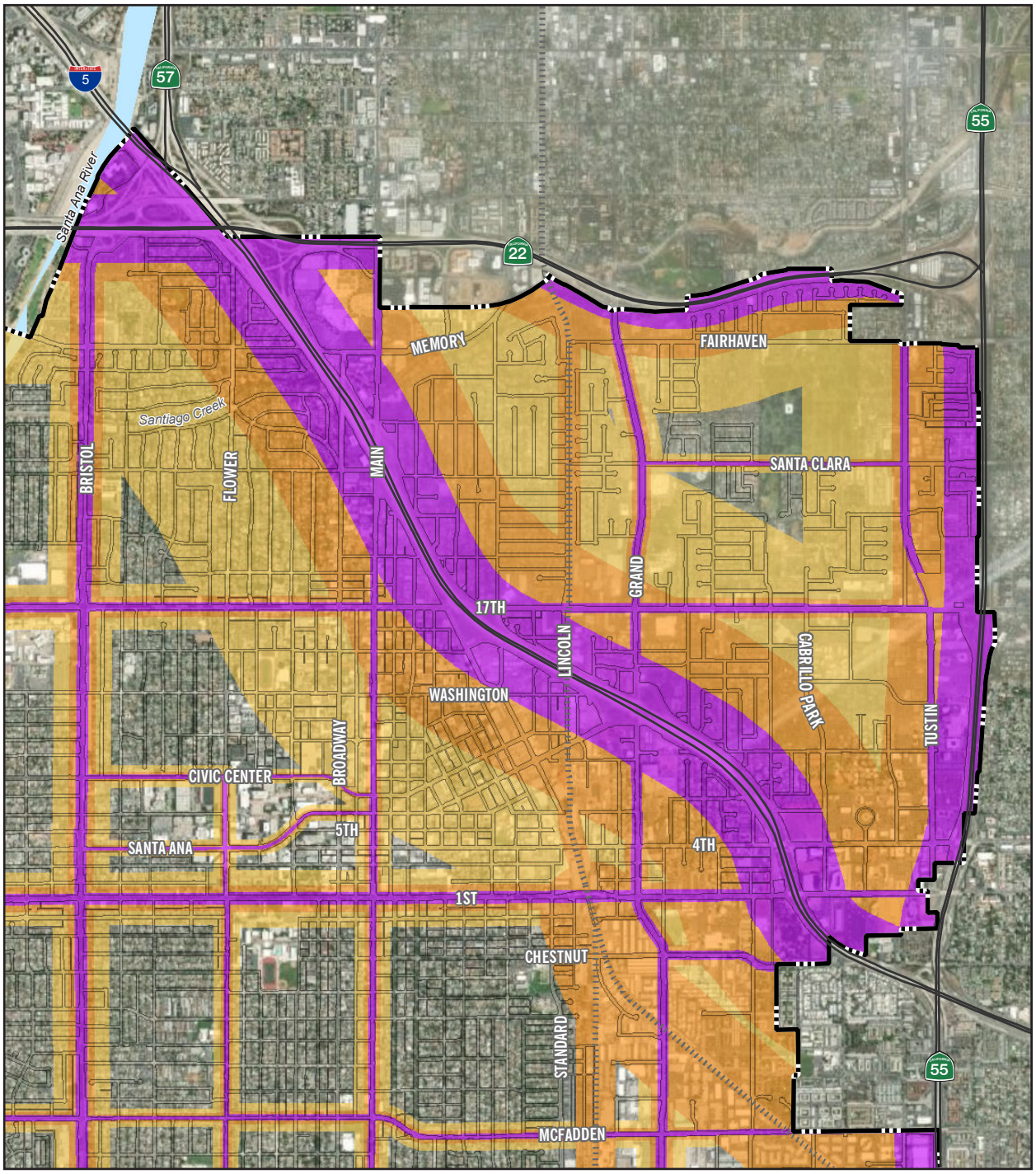
0 3,000
Scale (Feet)

Source: PlaceWorks, 2020; IBI, 2020

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Figure 5.12-3 - Existing Transportation CNEL Noise Levels (Northeast Quadrant)

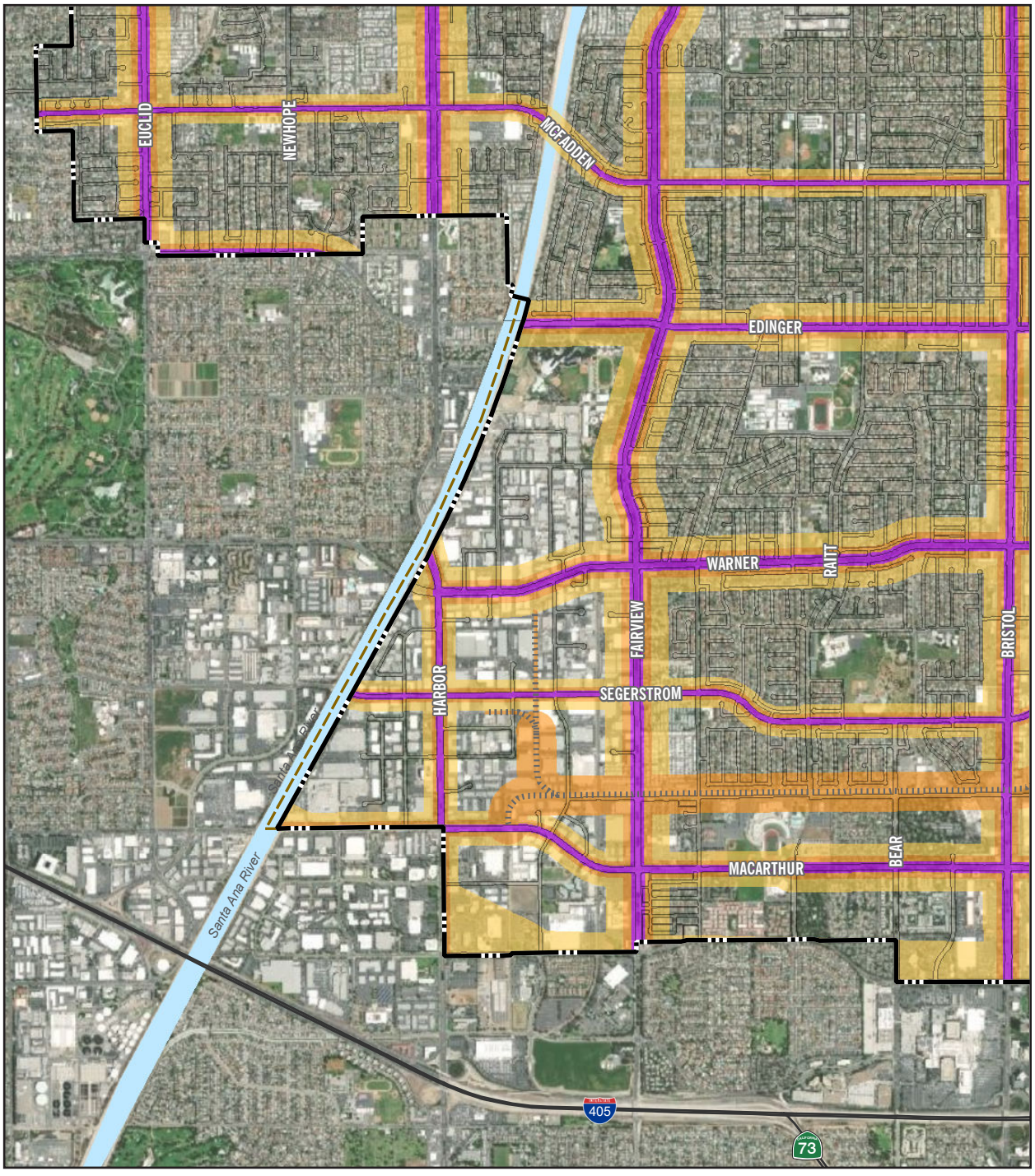


Source: PlaceWorks, 2020; IBI, 2020

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Figure 5.12-4 - Existing Transportation CNEL Noise Levels (Southwest Quadrant)



City of Santa Ana
City of Santa Ana SOI
Railway

Existing Noise Contour

70+ dBA
65 dBA
60 dBA



Key Map

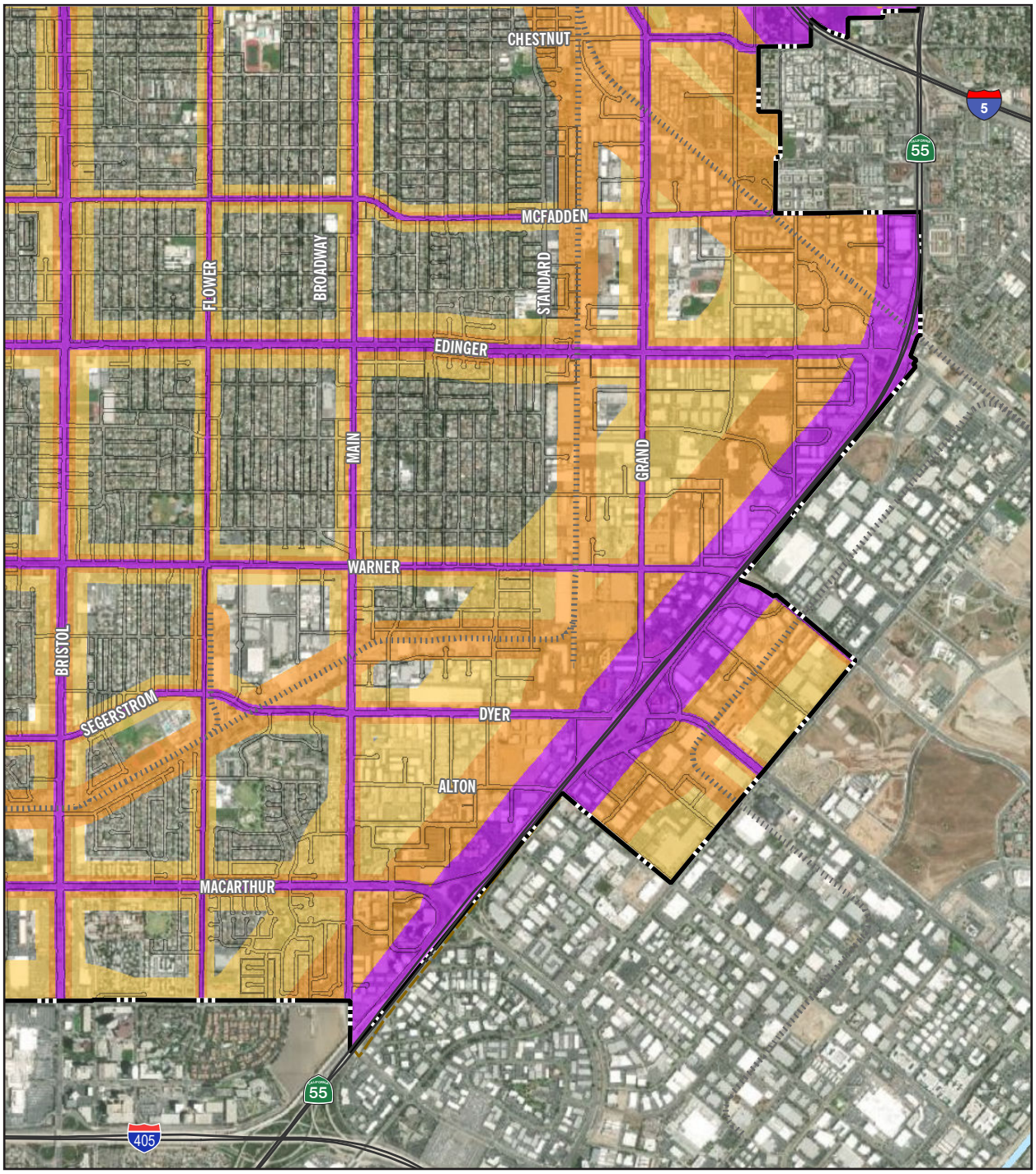
0 3,000
Scale (Feet)

Source: PlaceWorks, 2020; IBI, 2020

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Figure 5.12-5 - Existing Transportation CNEL Noise Levels (Southeast Quadrant)



City of Santa Ana
City of Santa Ana SOI
Railway

Existing Noise Contour

70+ dBA
65 dBA
60 dBA



Key Map

0 3,000
Scale (Feet)

Source: PlaceWorks, 2020; IBI, 2020

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Figure 5.12-6 - John Wayne Airport Noise Contours



City of Santa Ana

0 1
Scale (Miles)

Source: John Wayne Airport, 2019

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N-3 For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, if the project would expose people residing or working in the project area to excessive noise levels.

5.12.2.1 THRESHOLD OF SIGNIFICANCE CRITERIA

Construction Noise Thresholds

The City of Santa Ana's noise ordinance exempts noise from construction activities that occur during the daytime. No construction is permitted outside of the hours specified in Section 18-314(e) of the Santa Ana Municipal Code, which restricts construction activities to the hours of 7:00 AM to 8:00 PM Monday through Saturday. The City has not established noise limits for temporary construction. Therefore, the FTA construction noise criterion of 80 dBA $L_{eq(8hr)}$ for will be used in this analysis to assess construction noise impacts at sensitive receptors.

Stationary Noise Thresholds

The Municipal Code provides noise standards for stationary sources that would be analyzed at the project level in Section 18.312 and summarized in Table 5.12-3.

Transportation Noise Thresholds

A project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels for adjoining areas. Most people can detect changes in sound levels of approximately 3 dBA under normal, quiet conditions, and changes of 1 to 3 dBA are detectable under quiet, controlled conditions. Changes of less than 1 dBA are usually indiscernible. A change of 5 dBA is readily discernible to most people in an exterior environment. Based on this, the following thresholds of significance are used to assess traffic noise impacts at sensitive receptor locations:

- Greater than 1.5 dBA increase for ambient noise environments of 65 dBA CNEL and higher;
- Greater than 3 dBA increase for ambient noise environments of 60 -64 CNEL; and
- Greater than 5 dBA increase for ambient noise environments of less than 60 dBA CNEL.

Vibration Thresholds

Architectural Damage

The City of Santa Ana does not have specific limits or thresholds for construction vibration. Therefore, the standards recommended by the FTA shown in Table 5.12-4 are used in this analysis.

5.12.3 Regulatory Requirements and General Plan Update Policies

5.12.3.1 REGULATORY REQUIREMENTS

RR-NOI-1 **California Building Code:** The California Building Code (CBC), Title 24, Part 2, Volume 1, Chapter 12, Interior Environment, Section 1207.11.2, *Allowable Interior Noise Levels*, requires

that interior noise levels attributable to exterior sources shall not exceed 45 dB in any habitable room. The noise metric is evaluated as either the day-night average sound level (Ldn) or the community noise equivalent level (CNEL), consistent with the noise element of the local general plan.

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

RR-NOI-2 **Construction Noise Sources:** Section 18-314(e) of the Santa Ana Municipal Code prohibits construction activities to the hours of 7:00 AM to 8:00 PM Monday through Saturday.

RR-NOI-3 **Stationary Noise Sources:** Section 18.312 of the Santa Ana Municipal Code establishes standards for stationary noise sources (see Table 5.12-3).

5.12.3.2 GENERAL PLAN UPDATE POLICIES

Noise Element

The noise element aims to establish measures that address current and future noise problems. The proposed GPU includes goals and policies intended to avoid or reduce noise-related impacts. In most cases, no one goal or policy itself is expected to completely avoid or reduce an identified potential environmental impact. However, the collective, cumulative mitigating benefits of the policies listed below are intended to reduce noise-related impacts. Specific goals and policies are discussed in Section 5.12.4, *Environmental Impacts*, to demonstrate how the policy would avoid or reduce the impact.

Goal 1: Ensure that existing and future land uses are compatible with current and projected local and regional noise conditions.

- **Policy 1.1. Noise Standards:** Utilize established Citywide Noise Standards and guidelines to inform land use decisions and guide noise management strategies.
- **Policy 1.2. Sound Design:** Encourage functional and attractive designs to mitigate excessive noise levels.
- **Policy 1.3. Regional Noise Impacts:** Collaborate with local and regional transit agencies and other jurisdictions to minimize regional traffic noise and other sources of noise in the City.

- **Policy 1.4. Sensitive Uses:** Protect noise sensitive land uses from excessive, unsafe, or otherwise disruptive noise levels.

GOAL 2: Reduce the impact of known sources of noise and vibration.

- **Policy 2.1**. **Transportation Related Noise:** Reduce noise generated from traffic, railroads, transit, and airports to the extent feasible.

- **Policy 2.2. Stationary Related Noise:** Minimize noise impacts from commercial and industrial facilities adjacent to residential uses or zones where residential uses are permitted.

- **Policy 2.3. Temporary and/or Nuisance Noise**: Minimize the effects of intermittent, short-term, or other nuisance noise sources.

GOAL 3: Protect sensitive land uses from airport related noise impacts.

- **Policy 3.1. Residential Development:** Residential development within the John Wayne Airport (JWA) 65 dB(A) CNEL Noise Contour or greater is not supported.

- **Policy 3.2. Flight Paths:** Advocate that future flight path selection be directed away from existing noise sensitive land uses.

- **Policy 3.3. Residential Mitigation:** Require all residential land uses in 60 dB(A) CNEL or 65 dB(A) CNEL Noise Contours to be sufficiently mitigated so as not to exceed an interior standard of 45 dB(A) CNEL.

The proposed noise and land use compatibility standards for various land uses are shown in Table 5.12-8, *Interior and Exterior Noise Compatibility Standards (dBA CNEL).*

Table 5.12-8 Interior and Exterior Noise Compatibility Standards (dBA CNEL)

Categories	Land Use Categories	Interior[1]	Exterior[2]
Residential	Single-Family, Duplex, Multifamily	45[3]	65
Institutional	Hospital, School Classroom/Playgrounds	45	65
	Religious Facility, Library	45	--
Open Space	Parks	--	65

Notes:
[1] Interior areas (to include but are not limited to: bedrooms, bathrooms, kitchens, living rooms, dining rooms, private offices, and conference rooms).
[2] Exterior areas shall mean: private yards of single-family homes, park picnic areas, school playgrounds, common areas. Private open space, such as atriums on balconies, shall be excluded form exterior noise requirements provided sufficient common area is included within the project.
[3] Interior noise level requirements contemplate a closed window condition. Mechanical ventilation system or other means of natural ventilation shall be provided per Chapter 12 of the Uniform Building Code, as necessary.

Circulation Element

- **Policy CE-1.7. Proactive Mitigation**: Proactively mitigate potential air quality, noise, congestion, safety, and other impacts from the transportation network on residents and business.
- **Policy CE-1.8. Environmental Sustainability**: Consider air and water quality, noise reduction, neighborhood character, and street-level aesthetics when making improvements to travelways.
- **Policy CE-4.8. Noise Mitigation**: Encourage physical and operational improvements to reduce noise levels around major roads, freeways, and rail corridors, in particular around sensitive land uses.
- **Policy CE-5.2. Rail Corridors**: Coordinate with rail service providers to improve the aesthetics of rail corridors, and reduce noise levels, and mitigate traffic conflicts and other environmental hazards.

5.12.4 Environmental Impacts

5.12.4.1 METHODOLOGY

Traffic noise levels for existing and project conditions were estimated using the FHWA traffic noise prediction model methodology. Traffic volumes vehicle mix (auto, medium-duty truck, heavy-duty truck), time of day split (day, evening, night), speeds, and number of lanes data were provided by IBI for highway and roadway segments in the City for existing and 2045 General Plan buildout conditions (IBI 2020). The FHWA model predicts noise levels through a series of adjustments to a reference sound level. These adjustments account for distances from the roadway, traffic volumes, vehicle speeds, car/truck mix, number of lanes, and road width. The complete distances to the 70, 65, and 60 dBA CNEL noise contours for roadway segments in the City are included in Appendix J-b.

As a result of the Supreme Court decision regarding the assessment of the environment's impacts on projects (*California Building Industry Association (CBIA) v. Bay Area Air Quality Management District (BAAQMD)*, 62 Cal. 4th 369 (No. S 213478) issued December 17, 2015), it is generally no longer the purview of the CEQA process to evaluate the impact of existing environmental conditions on any given project. As a result, while the noise from existing sources is taken into account as part of the baseline, the direct effects of exterior noise from nearby noise sources relative to land use compatibility of a future project as a result of General Plan buildout is no typically longer a required topic for impact evaluation under CEQA. Generally, no determination of significance is required except for certain school projects, project's affected by airport noise, and project's that would exacerbate existing conditions (i.e., projects that would have a significant operational impact). As required by noise element policy 1.1, noise levels will be considered in land use planning decisions to prevent future noise and land use incompatibilities. At the discretion of the Santa Ana Planning and Building Agency, considerations may include, but not necessarily be limited to, standards that specify acceptable noise limits for various land uses, noise-reduction features, acoustical design in new construction, and enforcement of the California Uniform Building Code and City provisions for indoor and outdoor noise levels.

5.12.4.2 IMPACT ANALYSIS

The following impact analysis addresses thresholds of significance and applicable thresholds are identified in brackets after the impact statement.

Impact 5.12-1: Construction activities associated with buildout of the plan area would result in temporary noise increases at sensitive receptors. [Threshold N-1]

As part of implementation of the proposed project, various individual land use development projects would be constructed over the duration of the General Plan buildout. Construction is performed in distinct steps, each of which has its own mix of equipment, and, consequently, its own noise characteristics. Table 5.12-9 lists typical construction equipment noise levels recommended for noise-impact assessments, based on a distance of 50 feet between the equipment and noise receptor.

Table 5.12-9 Construction Equipment Noise Emission Levels

Construction Equipment	Typical Max Noise Level (dBA L_{max})[1]	Construction Equipment	Typical Max Noise Level (dBA L_{max})[1]
Air Compressor	81	Pile-Driver (Impact)	101
Backhoe	80	Pile-Driver (Sonic)	96
Ballast Equalizer	82	Pneumatic Tool	85
Ballast Tamper	83	Pump	76
Compactor	82	Rail Saw	90
Concrete Mixer	85	Rock Drill	98
Concrete Pump	71	Roller	74
Concrete Vibrator	76	Saw	76
Crane, Derrick	88	Scarifier	83
Crane, Mobile	83	Scraper	89
Dozer	85	Shovel	82
Generator	81	Spike Driver	77
Grader	85	Tie Cutter	84
Impact Wrench	85	Tie Handler	80
Jack Hammer	88	Tie Inserter	85
Loader	85	Truck	88
Paver	89		

Source: FTA 2018.
[1] Measured 50 feet from the source

As shown, construction equipment generates high levels of noise, with maximums ranging from 71 to 101 dBA. Construction of individual developments associated with implementation of the proposed project would temporarily increase the ambient noise environment and would have the potential to affect noise-sensitive land uses in the vicinity of an individual project. According to Santa Ana Municipal Code Section 18-314(e), construction noise is prohibited between the hours of 8:00 PM and 7:00 AM, Monday through Saturday.

Implementation of the project would result in an increase in development intensity to accommodate populations and employment growth. Construction noise levels are highly variable and dependent upon the specific locations, site plans, and construction details of individual projects. Significant noise impacts may occur from operation of heavy earth-moving equipment and truck-haul operations that would occur with construction of individual development projects, which have not yet been developed, particularly if construction techniques, such as impact or vibratory pile driving, are proposed. The time of day that construction activity is conducted would also determine the significance of each project, particularly during the more sensitive nighttime hours. However, construction would be localized and would occur intermittently for varying periods of time.

Because specific project-level information is inherently not available at this time, it is not possible nor appropriate to quantify the construction noise impacts at specific sensitive receptors. In most cases, construction of individual developments associated with implementation of the project would temporarily increase the ambient noise environment in the vicinity of each individual project, potentially affecting existing and future nearby sensitive uses. RR-NOI-2 and noise element policy 2.3 would help minimize the effects of intermittent and short-term construction noise. However, because construction activities associated with any individual development may occur near noise-sensitive receptors and because, depending on the project type, equipment list, time of day, phasing, and overall construction durations, noise disturbances may occur for prolonged periods of time or during the more sensitive nighttime hours, construction noise impacts associated with implementation of the project are considered potentially significant.

Level of Significance Before Mitigation: Impact 5.12-1 would be considered potentially significant.

Impact 5.12-2: Buildout of the plan area would cause a substantial traffic noise increase on local roadways and could locate sensitive receptors in areas that exceed established noise standards. [Threshold N-1]

Buildout of the GPU would result in an increase in traffic along local roadways proximate to existing sensitive receptors. Figures 5.12-7 through 5.12-10 illustrate the modeled roadways and future 2045 noise contours for 60 dBA CNEL, 65 dBA CNEL, and 70 dBA CNEL. The complete distances to the 70, 65, and 60 dBA CNEL noise contours for roadway segments in the City are included in Appendix J-b. Table 5.12-10 shows the estimated traffic noise increase along study roadway segments. The traffic noise increase is the difference between the projected future noise level and the existing noise level. As shown in Table 5.12-10, significant traffic noise increases are estimated along several of the study roadway segments from implementation of the GPU. Of the roadway segments with significant traffic noise increases, Warner Avenue – Grand Avenue to Red Hill Avenue is in the 55 Freeway / Dyer Road focus area. Along several roadway segments, a decrease in traffic noise levels is anticipated from implementation of the GPU. Noise element policies 1.2, 1.3, 1.4, and 2.1, and circulation element policies CE-1.7, CE-1.8, and CE-4.8 would help minimize and mitigate traffic noise impacts. However, traffic noise increases on the roadway segments shown in bold in Table 5.12.-10 are conservatively considered to remain significant.

Table 5.12-10 Traffic Noise Increases Along Study Roadway Segments

Roadway	Segment	Existing ADT	Future 2045 ADT	Existing Traffic Noise Level at 50 feet (dBA CNEL)	Future 2045 Traffic Noise Level at 50 feet (dBA CNEL)	Traffic Noise Increase, dBA CNEL
1st Street	Euclid Street to Ward Street	25,233	18,700	72.4	71.7	-0.7
Euclid Street	1st Street to McFadden Avenue	40,731	34,000	75.0	74.3	-0.7
Westminster Avenue	Harbor Boulevard to Fairview Street	30,459	17,400	74.1	72.4	-1.7
Harbor Boulevard	Westminster Avenue/17th Street to Hazard Avenue	54,137	36,200	76.6	74.5	-2.1
1st Street	Harbor Boulevard to Jackson	32,736	23,100	73.8	72.6	-1.3
Edinger Avenue	Harbor Boulevard to Fairview Street	27,838	23,300	73.9	73.7	-0.2
Warner Avenue	Harbor Boulevard to Fairview Street	31,945	26,300	74.6	74.2	-0.4
Harbor Boulevard	Segerstrom Avenue to MacArthur Boulevard	15,622	56,900	71.9	77.6	**5.7**
Fairview Street	1st Street to Willits Street	42,605	38,600	75.5	75.9	0.4
1st Street	Sullivan Street to Raitt Street	36,377	26,600	74.1	73.2	-1.0
Bristol Street	17th Street to Santa Clara Avenue	45,676	41,500	76.8	76.2	-0.6
17th Street	College Avenue to Bristol Street	37,345	29,500	73.8	73.6	-0.1
Bristol Street	17th Street to Washington Avenue	42,005	45,100	75.3	75.5	0.2
Fairview Street	Trask Avenue to 17th Street	40,432	48,100	76.2	76.9	0.6
Bristol Street	1st Street to Bishop Street	42,663	49,000	75.2	75.8	0.6

Table 5.12-10 Traffic Noise Increases Along Study Roadway Segments

Roadway	Segment	Existing ADT	Future 2045 ADT	Existing Traffic Noise Level at 50 feet (dBA CNEL)	Future 2045 Traffic Noise Level at 50 feet (dBA CNEL)	Traffic Noise Increase, dBA CNEL
Civic Center Drive	Bristol Street to Flower Street	17,589	18,600	69.1	70.2	1.1
Flower Street	1st Street to Bishop Street	15,622	6,900	69.2	65.8	-3.5
Main Street	17th Street to 20th Street	32,044	43,000	72.5	74.1	**1.6**
Main Street	Washington Street to Civic Center Drive	33,489	19,000	71.6	69.0	-2.6
Civic Center Drive	Flower Street to Ross Street	17,427	10,200	66.1	64.9	-1.2
Santa Ana Boulevard	Flower Street to Ross Street	14,689	15,800	67.3	68.2	0.9
1st Street	Main Street to Standard Avenue	42,699	32,900	75.3	73.9	-1.4
Main Street	1st Street to Bishop Street	30,125	30,500	72.2	72.4	0.1
Grand Avenue	Santa Clara Avenue to Fairhaven Street	30,206	31,100	73.3	73.9	0.6
Grand Avenue	Santa Ana Boulevard to 4th Street	36,678	35,000	74.3	74.4	0.1
Santa Clara Avenue	Grand Avenue to Tustin Avenue	10,585	8,700	67.8	68.0	0.1
Tustin Avenue	Santa Clara Avenue to Fairhaven Street	35,410	20,400	73.6	72.0	-1.6
17th Street	Cabrillo Park Drive to Tustin Avenue	32,080	34,600	72.8	74.3	1.5
Tustin Avenue	Fruit Street to 4th Street	25,174	28,100	71.9	73.4	1.5
1st Street	Grand Avenue to Elk Lane	28,638	30,800	73.5	73.6	0.0
1st Street	Cabrillo Park Drive to Tustin Avenue	22,083	14,600	71.9	70.3	-1.6

Table 5.12-10 Traffic Noise Increases Along Study Roadway Segments

Roadway	Segment	Existing ADT	Future 2045 ADT	Existing Traffic Noise Level at 50 feet (dBA CNEL)	Future 2045 Traffic Noise Level at 50 feet (dBA CNEL)	Traffic Noise Increase, dBA CNEL
Fairview Street	Edinger Avenue to Harvard Street	37,524	45,100	75.8	76.6	0.8
Fairview Street	Warner Avenue to Segerstrom Avenue	39,878	41,800	76.0	76.2	0.2
MacArthur Boulevard	Harbor Boulevard to Fairview Street	26,235	32,600	72.1	74.1	2.0 [1]
Edinger Avenue	Fairview Street to Greenville Street	29,115	22,200	72.0	71.2	-0.8
McFadden Avenue	Fairview Street to Raitt Street	20,997	8,200	70.6	66.5	-4.1
MacArthur Boulevard	Fairview Street to Raitt Street	28,809	28,900	72.3	73.5	1.2
Segerstrom Avenue	Fairview Street to Raitt Street	19,326	29,600	71.2	73.6	**2.4**
Bristol Street	Edinger Avenue to Warner Avenue	37,238	54,500	74.4	76.3	**1.9**
Bristol Street	Warner Avenue to Segerstrom Avenue	38,007	44,800	74.5	75.4	0.9
Warner Avenue	Raitt Street to Bristol Street	34,555	22,300	75.1	73.5	-1.6
Bristol Street	MacArthur Boulevard to Sunflower Avenue	34,731	50,800	74.3	76.0	1.7 [2]
Flower Street	Warner Avenue to Segerstrom Avenue	15,378	33,300	70.1	73.9	**3.8**
Edinger Avenue	Flower Street to Main Street	36,534	25,200	74.2	72.9	-1.2
Main Street	McFadden Avenue to Edinger Avenue	28,622	27,500	72.0	71.9	-0.1
Main Street	Edinger Avenue to Warner Avenue	27,972	38,200	72.2	73.4	1.2

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Table 5.12-10 Traffic Noise Increases Along Study Roadway Segments

Roadway	Segment	Existing ADT	Future 2045 ADT	Existing Traffic Noise Level at 50 feet (dBA CNEL)	Future 2045 Traffic Noise Level at 50 feet (dBA CNEL)	Traffic Noise Increase, dBA CNEL
Main Street	Warner Avenue to Dyer Rd	30,484	38,600	73.6	74.8	1.2
Segerstrom Avenue	Bristol Street to Flower Street	22,959	25,900	72.0	73.1	1.1
MacArthur Boulevard	Flower Street to Main Street	37,946	39,800	74.3	74.9	0.6
Main Street	MacArthur Boulevard to Sunflower Avenue	23,692	29,000	73.1	74.7	**1.6**
Grand Avenue	Edinger Avenue to Warner Avenue	17,735	37,300	71.1	75.7	**4.7**
Edinger Avenue	Richie Street to Newport Avenue	40,435	49,700	76.1	77.0	0.9
Warner Avenue	Grand Avenue to Red Hill Avenue	22,435	34,600	73.1	75.4	**2.4**
Warner Avenue	Main Street to Standard Avenue	27,391	23,900	72.9	72.7	-0.2
McFadden Avenue	Newhope Street to Harbor Boulevard	18,495	8,700	70.7	68.1	-2.6
McFadden Avenue	Standard Avenue to Grand Avenue	20,188	8,600	70.6	66.7	-3.9
Dyer Road	Red Hill Avenue to Pullman Street	31,248	80,700	74.1	78.0	**3.9**
McFadden Avenue	Bristol Street to Flower Street	14,951	11,800	68.0	66.8	-1.2

Table 5.12-10 Traffic Noise Increases Along Study Roadway Segments

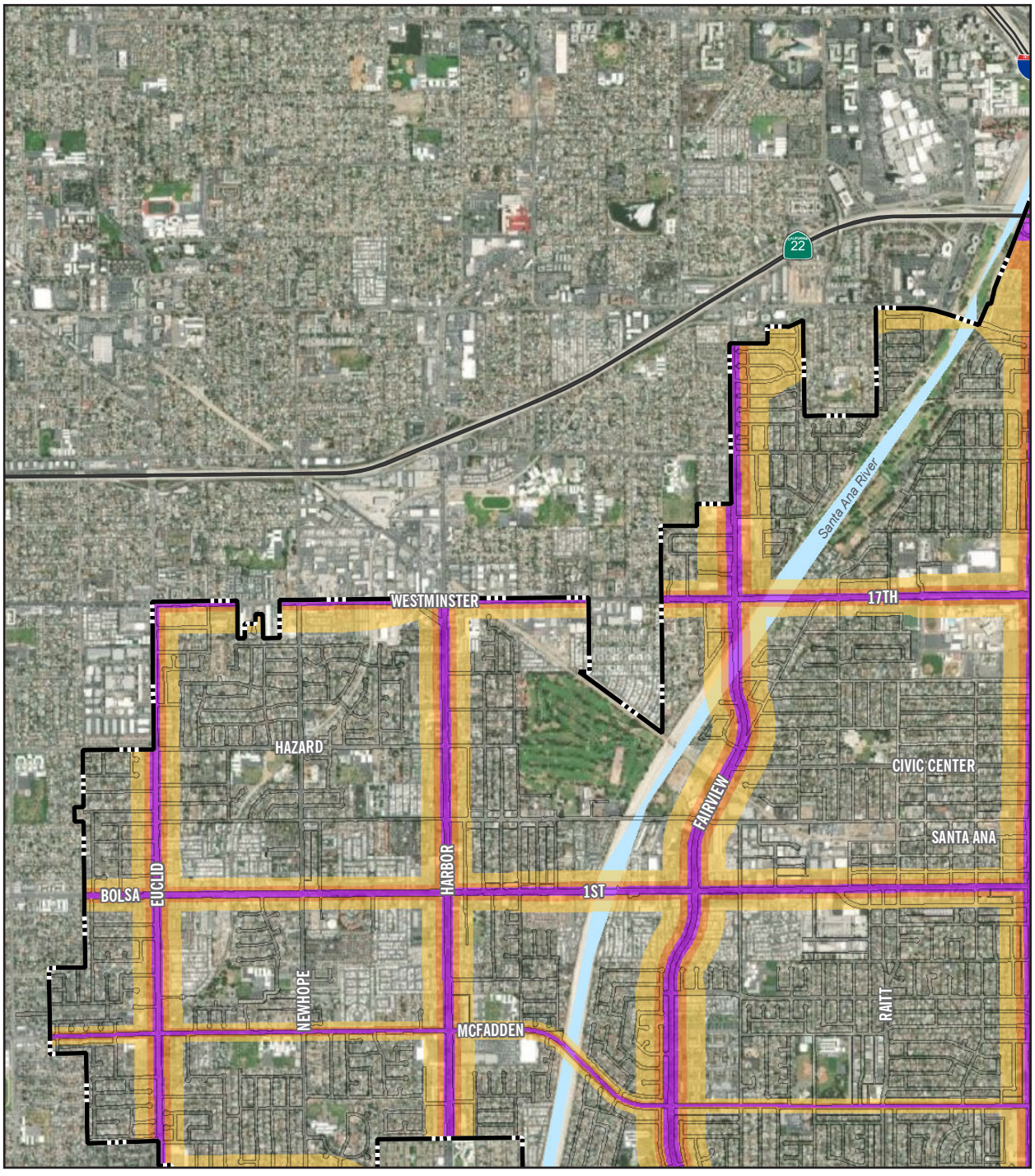
Roadway	Segment	Existing ADT	Future 2045 ADT	Existing Traffic Noise Level at 50 feet (dBA CNEL)	Future 2045 Traffic Noise Level at 50 feet (dBA CNEL)	Traffic Noise Increase, dBA CNEL
Main Street	La Veta Avenue to Memory Lane	31,004	50,200	73.8	75.9	**2.1**
1st Street	Bristol Street to Flower Street	39,006	25,700	74.8	72.8	-2.0

Source: Based on FHWA's traffic noise prediction model methodology using roadway volumes, vehicle mix, time of day splits, and number of lanes provided by IBI 2020.
Note: **Bold** values = significant traffic noise increase
1. The closest noise-sensitive receptor to the MacArthur Blvd. – Harbor Blvd. to Fairview St. segment is a park approximately 250 feet from the roadway. At this distance, future noise levels would attenuate to approximately 60 dBA CNEL and would be less than significant.
[2] The closest noise-sensitive receptors to the Bristol St. – MacArthur Blvd. to Sunflower Ave. segment are residences approximately 375 feet from the roadway. At this distance, future noise levels would attenuate to approximately 58 dBA CNEL and would be less than significant.

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NOISE

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Figure 5.12-7 - Future 2045 Transportation CNEL Noise Levels (Northwest Quadrant)



City of Santa Ana
City of Santa Ana SOI
Railway

Future 2045 Noise Contour

70+ dBA
65 dBA
60 dBA



Key Map

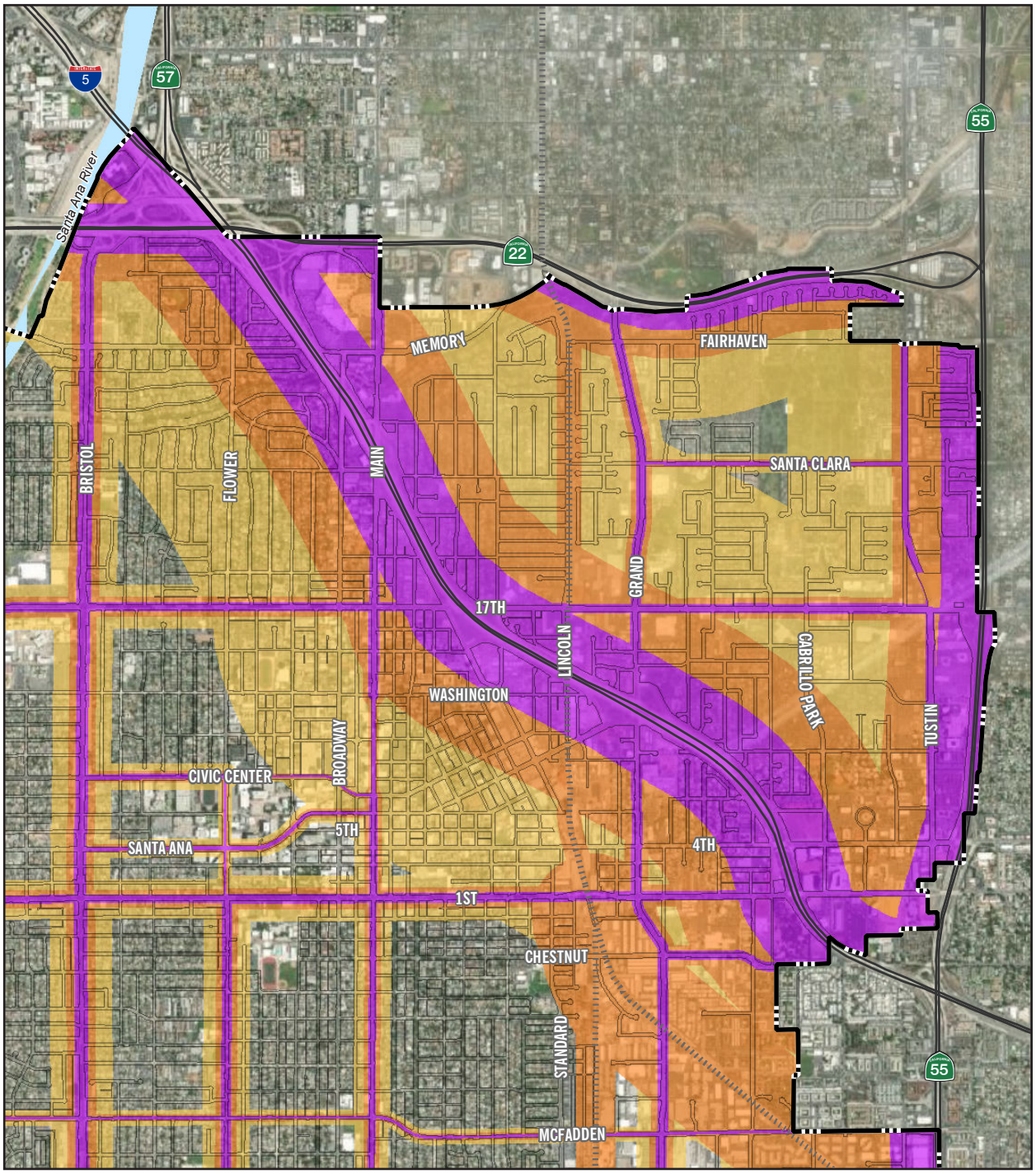
0 3,000
Scale (Feet)

Source: PlaceWorks, 2020; IBI, 2020

5. Environmental Analysis
NOISE

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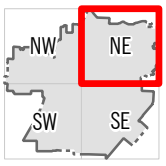
Figure 5.12-8 - Future 2045 Transportation CNEL Noise Levels (Northeast Quadrant)



City of Santa Ana
City of Santa Ana SOI
Railway

Future 2045 Noise Contour

70+ dBA
65 dBA
60 dBA



Key Map

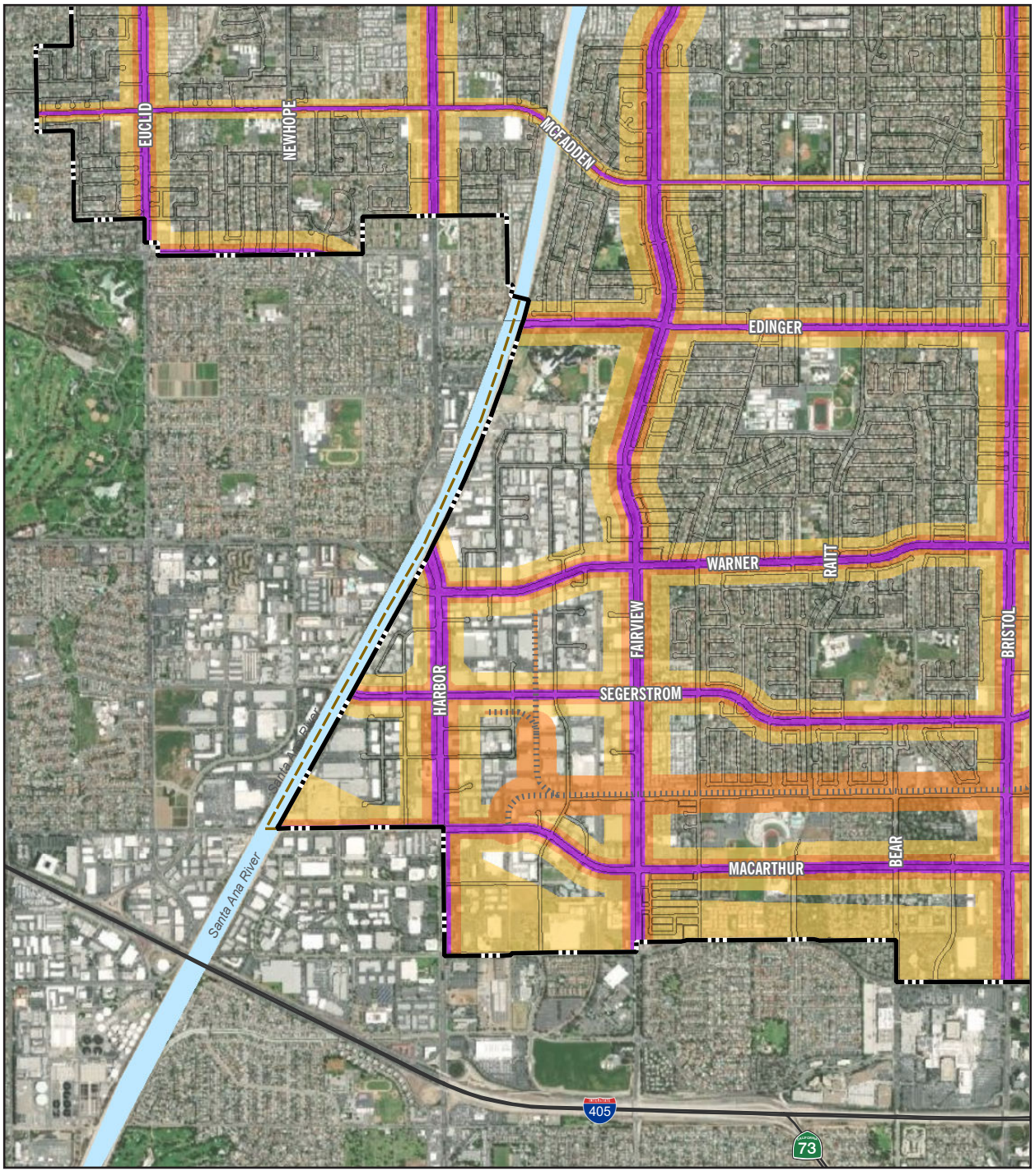
0 3,000
Scale (Feet)

Source: PlaceWorks, 2020; IBI, 2020

5. Environmental Analysis
NOISE

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Figure 5.12-9 - Future 2045 Transportation CNEL Noise Levels (Southwest Quadrant)



City of Santa Ana
City of Santa Ana SOI
Railway

Future 2045 Noise Contour

70+ dBA
65 dBA
60 dBA



Key Map

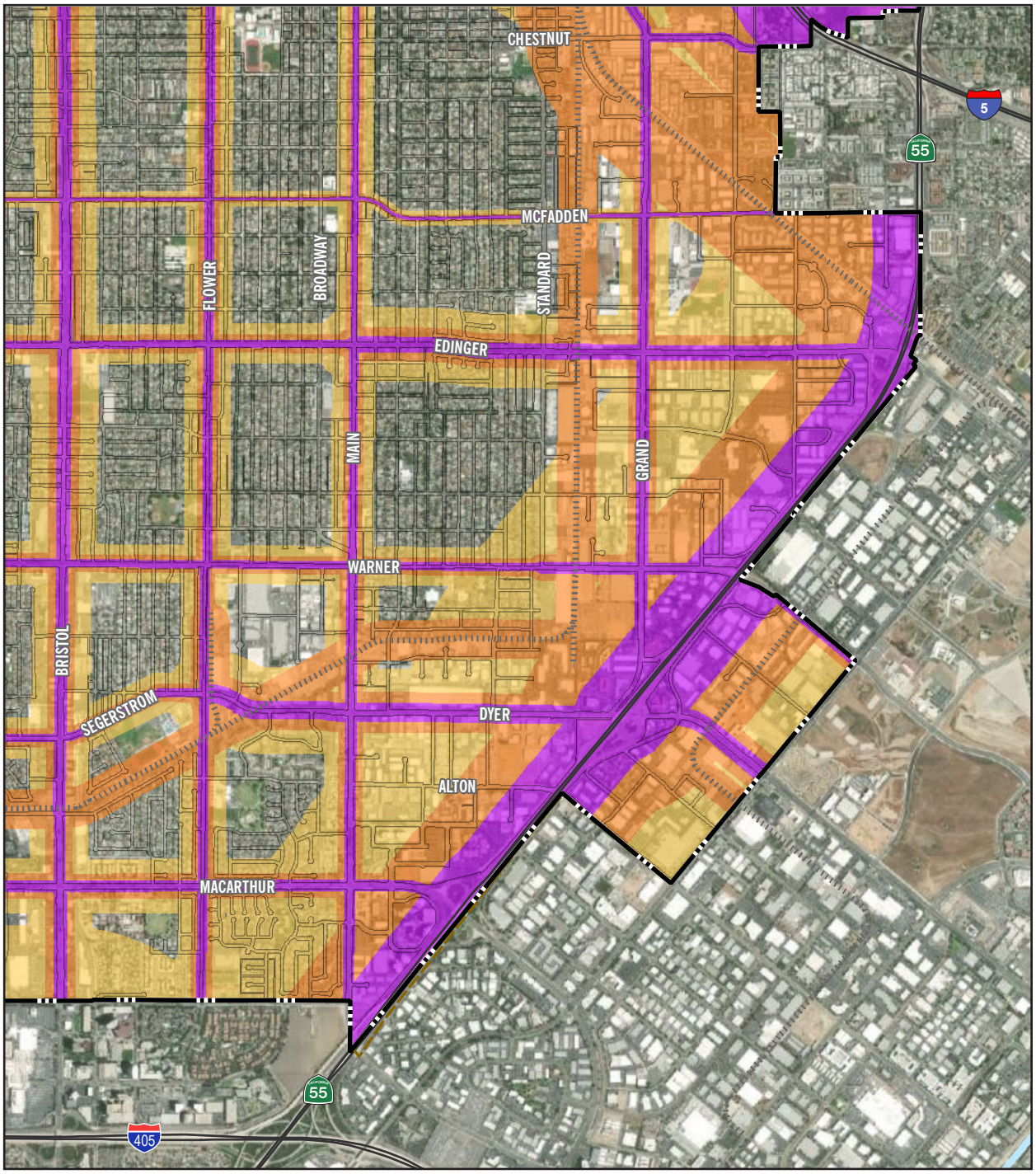
0 3,000
Scale (Feet)

Source: PlaceWorks, 2020; IBI, 2020

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NOISE

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Figure 5.12-10 - Future 2045 Transportation CNEL Noise Levels (Southeast Quadrant)



City of Santa Ana
City of Santa Ana SOI
Railway

Future 2045 Noise Contour

70+ dBA
65 dBA
60 dBA



Key Map

0 3,000
Scale (Feet)

Source: PlaceWorks, 2020; IBI, 2020

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NOISE

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In addition, future noise-sensitive land uses could be in areas that exceed the "Normally Acceptable" noise standards due to airport operations (see Figure 5.12-6 for airport noise contours) and due to railroad activity. Table 5.12-11 contains the calculated distances to the 65 dBA Ldn/CNEL contours from future railroad noise. The railroad noise contours are displayed graphically in Figures 5.12-7 through 5.12-10. The same methodology that was used to estimate existing railroad noise contours was used for future railroad activity. Though implementation of the proposed General Plan would not cause a direct increase in rail activity, future residential development could be placed within areas that would expose sensitive receptors to noise levels exceeding established standards. RR-NOI-1 and noise element policies 1.1, 1.2, 1.4, 2.1, 3.1, 3.2, and 3.3, and circulation element policies CE-4.8 and CE-5.2 would ensure that airplane and railroad noise affecting future noise-sensitive land uses is mitigated to acceptable levels.

In addition to the future railroad noise levels summarized in Table 5.12-11, the Santa Ana and Garden Grove Fixed Guideway Corridor project is anticipated to be operational in 2022. Noise and vibration impacts from this streetcar project were found to be less than significant with mitigation (OCTA 2014). Stationary source noise, such as from HVAC units and commercial loading docks, is controlled by the City's Municipal Code. RR-NOI-3 and noise element policy 2.2 would ensure that new stationary noise sources, such as mechanical equipment from HVAC, industrial facilities, and commercial uses are mitigated to acceptable noise limits as established by the City.

Table 5.12-11 2045 Railroad Noise Levels

Operator	Subdivision	Distance (feet) to 65 dBA CNEL Contour (Mainline)	Distance (feet) to 65 dBA CNEL Contour (Within 0.25 Mile of Grade Crossing)
Burlington North Santa Fe (BNSF)	Irvine Industrial Lead	20	266
Union Pacific (UP)	Santa Ana Industrial Lead	30	361
Southern California Regional Rail Authority	Orange Subdivision	220	1,136

Source: Calculated using the FTA CREATE Model and FRA Grade Crossing Horn Model. See Appendix J-b.

Level of Significance Before Mitigation: The proposed project would result in significant traffic noise increases.

Impact 5.12-3: Buildout of the individual land uses and projects for implementation of the GPU may expose sensitive uses to excessive levels of groundborne vibration. [Threshold N-2]

Construction Vibration Impacts

Construction activity at projects within the plan area would generate varying degrees of ground vibration, depending on the construction procedures and equipment. Operation of construction equipment generates vibrations that spread through the ground and diminish with distance from the source. The effect on buildings in the vicinity of the construction site varies depending on soil type, ground strata, and receptor-building construction. The results from vibration can range from no perceptible effects at the lowest vibration levels, to

low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. Vibration from construction activities rarely reaches the levels that can damage structures but can achieve the audible and perceptible ranges in buildings close to the construction site. Table 5.12-12 lists reference vibration levels for construction equipment.

Table 5.12-12 Vibration Levels for Construction Equipment

Equipment	Approximate PPV Vibration Level at 25 Feet (in/sec)
Pile Driver, Impact (Upper Range)	1.518
Pile Driver, Impact (Typical)	0.644
Pile Driver, Sonic (Upper Range)	0.734
Pile Driver, Sonic (Typical)	0.170
Vibratory Roller	0.210
Large Bulldozer	0.089
Caisson Drilling	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer	0.003

Source: FTA 2018.
PPV = peak particle velocity.

As shown in Table 5.12-12, vibration generated by construction equipment has the potential to be substantial, since it has the potential to exceed the FTA criteria for architectural damage (e.g., 0.12 inches per second [in/sec] PPV for fragile or historical resources, 0.2 in/sec PPV for non-engineered timber and masonry buildings, and 0.3 in/sec PPV for engineered concrete and masonry). Construction details and equipment for future project-level developments under the GPU are not known at this time but may cause vibration impacts. As such, this would be a potentially significant impact.

Operational Vibration Impacts

Commercial and industrial operations within the plan area would generate varying degrees of ground vibration, depending on the operational procedures and equipment. Such equipment-generated vibrations would spread through the ground and diminish with distance from the source. The effect on buildings in the vicinity of the vibration source varies depending on soil type, ground strata, and receptor-building construction. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. In addition, future sensitive receptors could be placed within close proximity to existing railroad lines through buildout in the plan area.

Because specific project-level information is not available at this time, it is not possible to quantify future vibration levels at vibration-sensitive receptors that may be near existing and future vibration sources. Therefore, with the potential for sensitive uses within the plan area to be exposed to annoying and/or interfering levels of vibration from commercial or industrial operations and existing railroad lines, operations-related vibration impacts associated with implementation of the GPU are considered potentially significant.

Level of Significance Before Mitigation: The proposed project would result in potentially significant impacts related to groundborne vibration.

Impact 5.12-4: The proximity of the plan area to an airport or airstrip would not result in exposure of future residents and/or workers to excessive airport-related noise. [Threshold N-3]

As discussed previously, there is one airport in Santa Ana, John Wayne Airport, whose noise contours are shown in Figure 5.12-6, *John Wayne Airport Noise Contours*. Future development of noise-sensitive land uses could be located in areas that exceed the 60 dBA CNEL. Noise element policies 3.1, 3.2, and 3.3 would require new development located within the airport's noise contours to be sufficiently mitigated to acceptable interior noise levels.

Level of Significance Before Mitigation: With implementation of the noise element policies listed above, Impact 5.12-4 would be less than significant.

5.12.5 Level of Significance Before Mitigation

With the implementation of GPU Policies, the following impacts would be **less than significant**:

- **Impact 5.12-4**

The following impacts would be **potentially significant:**

- **Impact 5.12-1** Because construction activities associated with any individual development may occur near noise-sensitive receptors and because, depending on the project type, equipment list, time of day, phasing and overall construction durations, noise disturbances may occur for prolonged periods of time or during the more sensitive nighttime hours, construction noise impacts associated with implementation of the GPU are considered potentially significant.

- **Impact 5.12-2** Traffic noise increases would be significant along several roadway segments throughout the City.

- **Impact 5.12-3** The potential for sensitive receptors within the plan area to be exposed to annoying and/or interfering levels of vibration from commercial or industrial operations and existing railroad lines, operations-related vibration impacts associated with implementation of the GPU are considered potentially significant.

5.12.6 Mitigation Measures

Impact 5.12-1

N-1 Construction contractors shall implement the following measures for construction activities conducted in the City of Santa Ana. Construction plans submitted to the City shall identify these measures on demolition, grading, and construction plans submitted to the City: The City

of Santa Ana Planning and Building Agency shall verify that grading, demolition, and/or construction plans submitted to the City include these notations prior to issuance of demolition, grading, and/or building permits.

- Construction activity is limited to the hours: Between 7 AM to 8 PM Monday through Saturday, as prescribed in Municipal Code Section 18-314(e). Construction is prohibited on Sundays.
- During the entire active construction period, equipment and trucks used for project construction shall use the best-available noise control techniques (e.g., improved mufflers, equipment re-design, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds), wherever feasible.
- Impact tools (e.g., jack hammers and hoe rams) shall be hydraulically or electrically powered wherever possible. Where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used along with external noise jackets on the tools.
- Stationary equipment, such as generators and air compressors shall be located as far as feasible from nearby noise-sensitive uses.
- Stockpiling shall be located as far as feasible from nearby noise-sensitive receptors.
- Construction traffic shall be limited, to the extent feasible, to approved haul routes established by the City Planning and Building Agency.
- At least 10 days prior to the start of construction activities, a sign shall be posted at the entrance(s) to the job site, clearly visible to the public, that includes permitted construction days and hours, as well as the telephone numbers of the City's and contractor's authorized representatives that are assigned to respond in the event of a noise or vibration complaint. If the authorized contractor's representative receives a complaint, he/she shall investigate, take appropriate corrective action, and report the action to the City.
- Signs shall be posted at the job site entrance(s), within the on-site construction zones, and along queueing lanes (if any) to reinforce the prohibition of unnecessary engine idling. All other equipment shall be turned off if not in use for more than 5 minutes.
- During the entire active construction period and to the extent feasible, the use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only. The construction manager shall use smart back-up alarms, which automatically adjust the alarm level based on the background noise level or switch off back-up alarms and replace with human spotters in compliance with all safety requirements and laws.
- Erect temporary noise barriers (at least as high as the exhaust of equipment and breaking line-of-sight between noise sources and sensitive receptors), as necessary and feasible, to maintain construction noise levels at or below the performance standard of 80 dBA Leq.

Barriers shall be constructed with a solid material that has a density of at least 4 pounds per square foot with no gaps from the ground to the top of the barrier.

Impact 5.12-3

N-2 Prior to issuance of a building permit for a project requiring pile driving during construction within 135 feet of fragile structures, such as historical resources, 100 feet of non-engineered timber and masonry buildings (e.g., most residential buildings), or within 75 feet of engineered concrete and masonry (no plaster); or a vibratory roller within 25 feet of any structure, the project applicant shall prepare a noise and vibration analysis to assess and mitigate potential noise and vibration impacts related to these activities. This noise and vibration analysis shall be conducted by a qualified and experienced acoustical consultant or engineer. The vibration levels shall not exceed Federal Transit Administration (FTA) architectural damage thresholds (e.g., 0.12 inches per second [in/sec] peak particle velocity [PPV] for fragile or historical resources, 0.2 in/sec PPV for non-engineered timber and masonry buildings, and 0.3 in/sec PPV for engineered concrete and masonry). If vibration levels would exceed this threshold, alternative uses such as drilling piles as opposed to pile driving and static rollers as opposed to vibratory rollers shall be used. If necessary, construction vibration monitoring shall be conducted to ensure vibration thresholds are not exceeded.

N-3 New residential projects (or other noise-sensitive uses) located within 200 feet of existing railroad lines shall be required to conduct a groundborne vibration and noise evaluation consistent with Federal Transit Administration (FTA)-approved methodologies.

N-4 During the project-level California Environmental Quality Act (CEQA) process for industrial developments under the General Plan Update or other projects that could generate substantial vibration levels near sensitive uses, a noise and vibration analysis shall be conducted to assess and mitigate potential noise and vibration impacts related to the operations of that individual development. This noise and vibration analysis shall be conducted by a qualified and experienced acoustical consultant or engineer and shall follow the latest CEQA guidelines, practices, and precedents.

Without other mitigation measures, existing noise-sensitive uses would be exposed to elevated traffic noise levels that would result in substantial impacts at some time in the GPU buildout. The following potential mitigation measures were considered.

Mitigation Measures Considered for Impact 5.12-2

In compliance with CEQA, "each public agency shall mitigate or avoid the significant effects on the environment of project it carries out or approves whenever it is feasible to do so" (Public Resources Code Section 21002.1(b)). The term "feasible" is defined in CEQA to mean "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors" (Public Resources Code Section 21061.1). A number of measures were considered for mitigating or avoiding traffic noise impacts (Impact 5.12-2).

Special Roadway Paving

Notable reductions in tire noise have been achieved via the implementation of special paving materials, such as rubberized asphalt or open-grade asphalt concrete overlays. For example, the California Department of Transportation conducted a study of pavement noise along Interstate 80 in Davis (Caltrans 2011) and found an average improvement of 6 to 7 dBA compared to conventional asphalt overlay.

Although this amount of noise reduction from rubberized/special asphalt materials would be sufficient to avoid the predicted noise increase due to traffic in some cases, the potential up-front and ongoing maintenance costs are such that the cost versus benefits ratio[1] may not be feasible and reasonable and would not mitigate noise to a level of less than significant in all cases. In addition, the study found that noise levels increased over time due to pavement raveling, with the chance of noise-level increases higher after a 10-year period.

Sound Barrier Walls

With a cursory review of aerial depictions of the impacted segments, the majority (if not all) residences around the plan area have direct access (via driveways) to the associated roadway. Therefore, barrier walls would prevent access to individual properties and would be infeasible. Further, these impacted homes are on private property outside of the control of future project developers, so there may be limited admittance onto these properties to construct such walls. Lastly, the costs versus benefits ratio in relation to the number of benefitted households may not be feasible and reasonable in all cases.

Sound Insulation of Existing Residences and Sensitive Receptors

Exterior-to-interior noise reductions depend on the materials used, the design of the homes, and their conditions. To determine what upgrades would be needed, a noise study would be required for each house to measure exterior-to-interior noise reduction. Sound insulation may require upgraded windows, upgraded doors, and a means of mechanical ventilation to allow for a "windows closed" condition. There are no funding mechanisms and procedures that would guarantee that the implementation of sound insulation features at each affected home would offset the increase in traffic noise to interior areas and ensure that the state's 45 dBA CNEL standard for multifamily residences would be achieved.

5.12.7 Level of Significance After Mitigation

Impact 5.12-1

Implementation of Mitigation Measure N-1 would reduce potential noise impacts during construction to the extent feasible. However, due to the potential for proximity of construction activities to sensitive uses, the number of construction projects occurring simultaneously, and the potential duration of construction activities, Impact 5.12-1 (construction noise) could result in a temporary substantial increase in noise levels above ambient conditions. Therefore, impacts would remain ***significant and unavoidable***. It should be noted that the

[1] Cost versus benefit considerations are in terms of the number of households benefited, per the general methodology employed by Caltrans in the evaluation of highway sound walls.

identification of this program-level impact does not preclude the finding of less-than-significant impacts for subsequent projects analyzed at the project level.

Impact 5.12-2

As demonstrated under the heading "Mitigation Measures Considered for Impact 5.12-2," there are no feasible or practical mitigation measures available to reduce project-generated traffic noise to less-than-significant levels for existing residences along the affected roadway. No individual measure and no set of feasible or practical mitigation measures are available to reduce project-generated traffic noise to less-than-significant levels in all cases. Thus, traffic noise would remain a ***significant and unavoidable*** impact in the plan area. It should be noted that the identification of this program-level impact does not preclude the finding of less-than-significant impacts for subsequent projects analyzed at the project level.

Impact 5.12-3

With implementation of Mitigation Measures N-2, N-3, and N-4, coupled with adherence to associated performance standards, Impact 5.12-3 would be reduced to less-than-significant levels. Specifically, Mitigation Measure N-2 would reduce potential vibration impacts during construction below the pertinent thresholds, and Mitigation Measures N-3 and N-4 (operations-related vibration) would reduce potential vibration impacts from commercial/industrial uses and proposed uses near existing railroads and facilities to less-than-significant levels. No significant and unavoidable vibration impacts would remain.

5.12.8 References

California Department of Transportation (Caltrans). 2011. "I-80 Davis OGAC Pavement Noise Study."

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Federal Highway Administration (FHWA). 1978, December. Federal Highway Traffic Noise Prediction Model. United States Department of Transportation Report No. FHWA-RD77-108.

Federal Transit Administration (FTA). 2018, September. *Transit Noise and Vibration Impact Assessment Manual.* US Department of Transportation.

Governor's Office of Planning and Research (OPR). 2017. *State of California General Plan Guidelines*.

Harris, Cyril M. 1998. *Handbook of Acoustical Measurements and Noise Control.* 3rd edition. Woodbury, NY: Acoustical Society of America.

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John Wayne Airport Orange County. 2019. "John Wayne Airport 2018 Annual 60–75 (5 dB intervals) CNEL Noise Contours." Exhibit prepared by Landrum & Brown. https://www.ocair.com/reportspublications/AccessNoise/cnelnoisecontours/2018.PDF.

Orange County Transportation Authority (OCTA). 2014, May. *Santa Ana and Garden Grove Fixed Guideway Corridor Environmental Assessment/Draft Environmental Impact Report*.

5.13 POPULATION AND HOUSING

This section of the Draft Program Environmental Impact Report (Draft PEIR) examines the potential for population and housing impacts of the proposed General Plan Update (GPU) in the City of Santa Ana and its sphere of influence (plan area), including changes in population, employment, and demand for housing, particularly housing cost/rent ranges defined as "affordable." The analysis in this section is based, in part, on sources of information from:

- United States Census Bureau
- California Department of Finance
- Orange County Council of Governments

5.13.1 Environmental Setting

5.13.1.1 REGULATORY BACKGROUND

State

California Housing Element Law

California planning and zoning law requires each city and county to adopt a general plan for future growth (California Government Code Section 65300). This plan must include a housing element that identifies housing needs for all economic segments and provides opportunities for housing development to meet that need. At the state level, the Housing and Community Development Department (HCD) estimates the relative share of California's projected population growth in each county based on California Department of Finance (DOF) population projections and historical growth trends. These figures are compiled by HCD in a Regional Housing Needs Assessment (RHNA) for each region of California. Where there is a regional council of governments (COG), the HCD provides the RHNA to the council. The council then assigns a share of the regional housing need to each of its cities and counties. The process of assigning shares gives cities and counties the opportunity to comment on the proposed allocations. The HCD oversees the process to ensure that the council of governments distributes its share of the state's projected housing need.

State law recognizes the vital role local governments play in the supply and affordability of housing, and California Government Code requires that the housing element achieve legislative goals to:

- Identify adequate sites to facilitate and encourage the development, maintenance, and improvement of housing for households of all economic levels, including persons with disabilities.

- Remove, as legally feasible and appropriate, governmental constraints to the production, maintenance, and improvement of housing for persons of all incomes, including those with disabilities.

- Assist in the development of adequate housing to meet the needs of low- and moderate-income households.

- Conserve and improve the condition of housing and neighborhoods, including existing affordable housing.
- Promote housing opportunities for all persons regardless of race, religion, sex, marital status, ancestry, national origin, color, familial status, or disability.
- Preserve for lower income households the publicly assisted multifamily housing developments in each community.

California housing element law (Sections 65580 to 65589 of the California Government Code) requires that each city and county identify and analyze existing and projected housing needs within its jurisdiction and prepare goals, policies, and programs to further the development, improvement, and preservation of housing for all economic segments of the community, commensurate with local housing needs.

Housing Accountability Act

The Housing Accountability Act (HAA) requires that cities approve applications for residential development that are consistent with a city's general plan and zoning code development standards without reducing the proposed density. Examples of objective standards are those that are measurable and have clear criteria that are determined in advance, such as numerical setback, height limit, universal design, lot coverage requirement, or parking requirement. Under the HAA, an applicant is entitled to the full density allowed by the zoning and/or general plan provided the project complies with all objective general plan, zoning, and subdivision standards and provided that the full density proposed does not result in a specific, adverse impact on public health and safety and cannot be mitigated in any other way.

Amendment to the Housing Accountability Act (AB 678)

AB 678 amends the HAA by increasing the documentation and standard of proof required for a local agency to legally defend its denial of low- to moderate-income housing development projects. This bill, if the local agency considers the housing development project to be inconsistent, not in compliance, or not in conformity, would require the local agency to provide the applicant with written documentation identifying the provision or provisions, and an explanation of the reason or reasons it considers the housing development to be inconsistent, not in compliance, or not in conformity within specified time periods. If the local agency fails to provide this documentation, the housing development project would be deemed consistent, compliant, and in conformity with the applicable plan, program, policy, ordinance, standard, requirement, or other similar provision.

Reasonable Person Standard (AB 1515)

This bill specifies that a housing development project is deemed consistent, compliant, and in conformity with an applicable plan, program, policy, ordinance, standard, requirement, or other similar provision if there is substantial evidence that would allow a reasonable person to conclude that the housing development project or emergency shelter is consistent, compliant, or in conformity. This bill added additional findings related to the Housing Accountability Act in this regard.

Regional

Regional Transportation Plan/Sustainable Communities Strategy

The Southern California Association of Governments (SCAG) represents Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties. It is a regional planning agency and serves as a forum for addressing regional issues concerning transportation, the economy, community development, and the environment.

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

Local

City of Santa Ana Housing Element

To comply with state law, Santa Ana prepares a housing element every five years. The housing element must contain goals, policies, and programs to facilitate the development, improvement, and preservation of housing. State law prescribes the scope and content of the housing element pursuant to Section 65583 of the California Government Code. Santa Ana has adopted a series of implementation tools—specific plans, overlay zones, and other plans—to guide future development in focused areas. These include the Metro East Mixed-Use Overlay Zone, Transit Zoning Code, Specific Development Districts, and similar efforts. The housing element is designed to serve as an overarching policy document that bridges specific implementation plans with the goals and policies in the general plan. The housing element provides a guiding framework for housing citywide, and specific implementation tools provide guidance for specific areas of the city.

City of Santa Ana Housing Opportunity Ordinance

The Housing Opportunity Ordinance (HOO) establishes standards and procedures to encourage the development of housing that is affordable to a range of households with varying income levels. The purpose of the ordinance is to encourage the development and availability of affordable housing by requiring the inclusion of affordable housing units within new developments or the conversion of rental units to condominium ownership when the number of units exceed the densities permitted under the General Plan.

5.13.1.2 EXISTING CONDITIONS

Methodology

The plan area's demographics are examined in the context of existing and projected population for the Orange County region and the City of Santa Ana. Information on population, housing, and employment for the planning area is available from several sources:

- **California Department of Finance.** The DOF prepares and administers California's annual budget. Other duties include estimating population demographics and enrollment projections. DOF's Table E-5, "City/County Population and Housing Estimates," reports on population and housing estimates for the state, counties, and cities, benchmarked to base year 2010.

- **Orange County Council of Governments.** Employment, housing, and population projections data for 2016-2045 for the 2018 Orange County Projections dataset were prepared by the Center for Demographic Research (CDR). The CDR is the entity through which jurisdictions in Orange County distribute and generate population, housing, and employment projections for Orange County. This includes the use of Orange County Projection figures to communicate expected growth for the regional transportation plan.

- **United States Census Bureau.** The official United States Census is described in Article I, Section 2 of the Constitution of the United States. It calls for an actual enumeration of the people every 10 years, to be used for apportionment among the states of seats in the House of Representatives. The United States Census Bureau publishes population and household data gathered in the decennial census.

Population Trends

Table 5.13-1 shows population growth trends in Santa Ana and Orange County collected by the DOF. According to the data, population steadily decreased in Santa Ana from 2000 to 2008, with no net change from 2009 to 2010. After 2011, the population increased till 2017, after which it started decreasing. Orange County has been experiencing a population increase since the year 2000. Between 2000 and 2019, Santa Ana experienced a net decrease in population of 0.1 percent. Orange County experienced a population increase of 12.4 percent during that same time.

It should be noted that the 17th Street Island area (see Figure 3-3) was not annexed into the city until November 2019, and therefore is not accounted for in the DOF numbers from the years 2005 to 2018. It should also be noted that this area is 24.79 acres, which is quite small compared to the rest of the city and consists of single family residential, multi-family residential, and commercial uses. The 17th Street Island area had a population of 275 in 2019 (LAFCO 2019).

Table 5.13-1 Population Growth Trends in the City of Santa Ana and Orange County

	City of Santa		Orange County	
Year	Population	Percent Change	Population	Percent Change
2000	337,977	NA	2,846,289	NA
2001	337,883	0.0	2,871,926	0.9%
2002	337,077	-0.2	2,902,207	1.0%
2003	336,961	0.0	2,927,118	0.9%
2004	335,434	-0.5	2,948,135	0.7%
2005	332,878	-0.8	2,956,847	0.3%
2006	329,470	-1.0	2,956,334	0.0%
2007	326,817	-0.8	2,960,659	0.1%
2008	324,653	-0.7	2,974,321	0.5%
2009	325,564	0.3	2,990,805	0.6%
2010	324,647	-0.3	3,010,232	0.6%
2011	327,063	0.7	3,040,125	1.0%
2012	331,062	1.2	3,076,373	1.2%
2013	335,683	1.4	3,109,213	1.1%
2014	336,746	0.3	3,131,411	0.7%
2015	338,011	0.4	3,155,578	0.8%
2016	338,250	0.1	3,174,945	0.6%
2017	339,865	0.5	3,199,509	0.8%
2018	339,192	-0.2	3,213,275	0.4%
2019	334,774[1]	-1.3	3,222,498	0.3%

Source: DOF 2012, 2019; PlaceWorks 2020.
[1] From Table 3-7 of this Draft PEIR.

Housing

Housing Trends

According to Table 5.13-2, the rate of housing growth in the city increased steadily from 2001 to 2003, after which the city experienced three years of high growth followed by lower growth rates until 2008. The city experienced its highest housing growth in the year 2009. Growth rates after 2009 stabilized at an average of 0.3 percent. Orange County's housing grew at a higher rate than Santa Ana's. Housing growth rates in Orange County dropped in the year 2006 and continued to decrease till the year 2013. From 2013 onward, the housing growth rate gradually increased. Santa Ana gained 3,975 dwelling units, and Orange County gained 134,680 dwelling units between 2000 and 2019, an increase of approximately 5.1 and 12.2 percent, respectively. Comparing Tables 5.13-1 and 5.13-2, population and housing grew in proportions with each other.

Table 5.13-2 Housing Growth Trends in Santa Ana and Orange County

	City of Santa Ana		Orange County	
Year	Dwelling Units	Percent Change	Dwelling Units	Percent Change
2000	74,588	NA	969,484	NA
2001	74,682	0.1	977,272	0.8
2002	74,810	0.2	987,752	1.1
2003	75,173	0.5	996,832	0.9
2004	75,362	0.3	1,006,708	1.0
2005	75,673	0.4	1,017,428	1.1
2006	75,838	0.2	1,023,604	0.6
2007	75,978	0.2	1,030,692	0.7
2008	76,159	0.2	1,037,103	0.6
2009	76,686	0.7	1,042,526	0.5
2010	76,919	0.3	1,046,118	0.3
2011	76,937	0.0	1,050,157	0.4
2012	76,976	0.1	1,052,346	0.2
2013	76,991	0.0	1,056,222	0.4
2014	77,133	0.2	1,063,092	0.6
2015	77,477	0.4	1,069,645	0.6
2016	77,610	0.2	1,076,198	0.6
2017	77,891	0.4	1,084,474	0.8
2018	78,068	0.2	1,094,254	0.9
2019	78,792[1]	0.6	1,104,164	0.9

Source: DOF 2012, 2019; PlaceWorks 2020.
[1] From Table 3-8 of this Draft PEIR.

The DOF housing numbers from the years 2000 to 2018 do not include the 17th Street Island area. In 2018 this area included 40 single-family units and 32 multifamily units and a population of 275 (Santa Ana 2018).

Existing Housing Units

Table 5.13-3 compiles the housing unit types in Santa Ana and Orange County. According to 2019 data, the majority of housing units in the city and county are single-family detached units.

Table 5.13-3 Housing Units in Santa Ana and Orange County by Type (2019)

	City of Santa		Orange County	
Type	Number of Units	Percent	Number of Units	Percent
Single-Family Detached	35,692	45.4%	554,030	50.2%
Single-Family Attached	5,799	7.4%	131,446	11.9%
Multifamily (2–4 Units)	7,563	9.6%	94,403	8.5%
Multifamily (5 or More Units)	25,460	32.4%	290,766	26.3%
Mobile Homes	4,049	5.2%	33,519	3.0%
Totals	**78,563**[1]	**100%**	**1,104,164**	**100%**
	Percent Vacant = 4.1%		Percent Vacant = 5.2%	
	Household Size = 4.42		Household Size = 3.03	

Source: DOF 2019.
[1] This number is slightly less than the number calculated by PlaceWorks and shown in Table 5.13-2.

The vacancy rate is approximately 4.1 and 5.2 percent in Santa Ana and Orange County, respectively. These vacancy rates are not abnormally high or low, which indicates that the population and number of housing units are growing at a similar pace; oversupply is not an issue.

Regional Housing Needs Assessment

Santa Ana's RHNA for the 2014–2021 planning period is 204 units with a carryover from the previous planning period of 201 lower-income units, for a combined RHNA of 405 units divided into four income groups (as shown in Table 5.13-4).

Table 5.13-4 City of Santa Ana 2014–2021 Regional Housing Needs Assessment

Income Category	Very Low	Low	Moderate	Above Moderate	Total
2014–2021 RHNA	45	32	37	90	204
Carryover 2006–2014 RHNA	111	90	0	0	201
Combined RHNA	**156**	**122**	**37**	**90**	**405**

Source: Santa Ana 2014.

Employment

Employment Trends

The California Employment Development Department provides labor market statistics for the state and different geographic regions of California as a way to analyze California's economic health. Table 5.13-5 illustrates Santa Ana and Orange County employment trends from 2013 to 2019. The city and county both experienced yearly increases in employment from 2013 until 2019. Overall, the city gained 9,400 jobs and Orange County gained 115,900 jobs between 2013 and 2019. It should be noted that the 2019 employment

numbers include the 17th Street Island area, and the previous years did not. In 2019, there were 78 employees in 17th Street Island area.

Table 5.13-5 Employment Growth Trends in Santa Ana and Orange County

	City of Santa Ana		Orange County	
Year	Employment (Persons)	Percent Change	Employment (Persons)	Percent Change
2013	144,400	NA	1,462,400	NA
2014	146,700	1.6%	1,485,700	1.6%
2015	149,900	2.2%	1,518,000	2.2%
2016	151,900	1.3%	1,538,000	1.3%
2017	154,600	1.8%	1,562,600	1.6%
2018	153,000	1.4%	1,569,800	2.0%
2019	158,980[1]	3.9%	1,578,300	0.5%

Source: EDD 2020; PlaceWorks 2020.
[1] From Table 3-8 of this Draft PEIR.

Existing Employment

Based on the 2014–2018 American Community Survey (ACS) conducted by the US Census Bureau, the city's employment is organized by occupation and industry sectors shown in Table 5.13-6. According to the data, an estimated 28.5 percent of the employees in Santa Ana worked in service occupations, and 21.1 percent worked in sales and office occupations. The largest industry sector in 2018 was educational services, health care, and social assistance, which accounted for approximately 14.7 percent of civilian jobs. According to the ACS, the City of Santa Ana had an employed civilian labor force (16 years and older) of 164,903 persons in 2018. However, it should be noted that ACS survey estimates have margins of error. For example, Santa Ana's total employed civilian labor force of 164,903 has a margin of error of ±4,210 persons. Thus, employment analysis for the Santa Ana plan area under the "Jobs-Housing Ratio" subsection uses employment data from Table 5.13-5.

Table 5.13-6 City of Santa Ana Employment by Sector (2018)

Occupation/Industry	Number	Percent
Occupation		
Management, business, science, and arts occupations	36,499	22.1
Service occupations	47,050	28.5
Sales and office occupations	34,792	21.1
Natural resources, construction, and maintenance occupations	16,297	9.9
Production, transportation, and material moving occupations	30,294	18.4
Total	**164,903**	**100**
Industry		
Agriculture, forestry, fishing and hunting, and mining	1,850	1.1
Construction	13,945	8.5
Manufacturing	20,550	12.5
Wholesale trade	6,403	3.9
Retail trade	16,372	9.9
Transportation and warehousing, and utilities	6,956	4.2
Information	1,151	0.7
Finance and insurance, and real estate and rental and leasing	9,784	5.9
Professional, scientific, and management, and administrative and waste management services	25,633	15.5
Educational services, and health care and social assistance	24,306	14.7
Arts, entertainment, and recreation, and accommodation and food services	22,416	13.6
Other services, except public administration	12,398	7.5
Public administration	3,139	1.9
Total	**164,903**	**100**

Source: US Census 2018.

Jobs-Housing Ratio

The jobs-housing ratio is a general measure of the total number of jobs and housing units in a defined geographic area, without regard to economic constraints or individual preferences. The balance of jobs and housing in an area, in terms of the total number of jobs and housing units as well as the type of jobs versus the price of housing, has implications for mobility, air quality, and the distribution of tax revenues. The jobs-housing ratio is one indicator of a project's effect on growth and quality of life in the project area. No ideal jobs-housing ratio is adopted in state, regional, or city policies. However, the DOF provides a quantitative definition by estimating that a healthy jobs-housing balance is one new home built for every 1.5 jobs created (Little Hoover Commission 2013).

Jobs-housing balance in Santa Ana and Orange County, calculated from DOF, EDD, and Orange County COG data,[1] is shown in Table 5.13-7. As shown, Santa Ana is jobs-rich, with a 2018 jobs-housing ratio of 2. In comparison, Orange County has a balanced jobs-housing ratio at 1.4. Projections for 2045 are provided by Orange County COG and show that both Santa Ana's and Orange County's jobs-housing ratios are anticipated to increase from 2018 ratios to 2.1 and 1.6, respectively.

Table 5.13-7 Population and Employment Projections for Santa Ana and Orange County

	City of Santa Ana Plan Area		Orange County	
	2019	2045	2019	2045
Population	334,774	360,077	3,222,498	3,534,620
Housing Units	78,792	83,385	1,104,164	1,206,257
Employment	158,980	172,398	1,578,300	1,980,433
Jobs-Housing Ratio	2.0	2.1	1.4	1.6

Notes: The Southern California Association of Government projects population, housing units, and employment numbers for 2045 for the City based on CDR's projections. The Demographics and Growth Forecast document on which the 2020/2045 Regional Transportation Plan is based projects a population for the City of 360,100, a housing projection of 80,100, and an employment projection of 172,400 (SCAG 2020a). These numbers are very close to the numbers shown for the City in this table. Source: DOF 2019; EDD 2020; CDR 2018, 2019.

5.13.2 Thresholds of Significance

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a project would normally have a significant effect on the environment if the project would:

P-1 Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

P-2 Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

5.13.3 Regulatory Requirements and General Plan Policies

5.13.3.1 REGULATORY REQUIREMENTS

No existing regulations are applicable to population and housing impacts.

5.13.3.2 GPU POLICIES

The following are relevant policies of the Santa Ana GPU, which may contribute to reduce potential impacts to population and housing as a result of implementation of the GPU.

[1] Orange County COG data is prepared by the Center for Demographic Research (CDR).

Conservation Element

- **Policy 1.7. Housing and Employment Opportunities:** Improve the City's jobs/housing balance ratio by supporting development that provides housing and employment opportunities to enable people to live and work in Santa Ana.

Land Use Element

- **Policy 1.2. Homeownership Opportunities:** Support innovative development policies to expand homeownership opportunities at all income levels.
- **Policy 1.5. Diverse Housing Types:** Incentivize quality infill residential development that provides a diversity of housing types and accommodates all income levels and age groups.
- **Policy 2.1. Employment Opportunities:** Provide a broad spectrum of land uses and development that offer employment opportunities for current and future Santa Ana residents.
- **Policy 2.5. Benefits of Mixed Use:** Encourage infill mixed-use development at all ranges of affordability to reduce vehicle miles travelled, improve jobs/housing balance, and promote social interaction.

Housing Element

- **Policy 2.3. Rental Housing:** Encourage the construction of rental housing for Santa Ana's residents and workforce, including a commitment to very low, low, and moderate-income residents and moderate income Santa Ana workers.
- **Policy 2.4. Diverse Housing Types:** Facilitate diverse types, prices, and sizes of housing, including single-family homes, apartments, townhomes, mixed/multiuse housing, transit-oriented housing, multigenerational housing, and live-work opportunities.
- **Policy 2.6. Affordable Component:** Pursuant to the Housing Opportunity Ordinance, require eligible rental and ownership housing projects to include at least 15 percent of the housing units as affordable for lower and moderate-income households.
- **Policy 2.8. Housing Authority-Owned Sites.:** Maximize affordable housing on Authority-owned properties that is of high quality, sustainable, and available to various income levels.

Economic Prosperity Element

- **Policy 2.5. Sufficient Industrial Land:** Ensure sufficient availability of industrial zoned properties and businesses that provide employment opportunities for the City's resident population.
- **Policy 2.7. Infrastructure as an Amenity:** Provide state-of-the-art infrastructure systems with sufficient capacity to attract emerging businesses, encourage efficient public service delivery, and foster a sustainable community.

5.13.4 Environmental Impacts

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

It is important to note the differences between the GPU's buildout projections and Orange County COG projections. Buildout of Santa Ana under the GPU is not linked to a development timeline and is based on a conservative buildout of the parcels in the city as identified in the proposed land use plan.[2] In addition, the GPU provides policy-level guidance and does not contain specific project proposals. On the other hand, Orange County COG projections are based on annual increments to develop regional growth projections for land use and transportation planning over a 25-year horizon to the year 2045. Nevertheless, a comparison of the GPU buildout to Orange County COG's population, housing, and employment projections does assist in providing a general context for comparison.

Impact 5.13-1: The GPU would directly induce substantial unplanned population growth [Threshold P-1]

Population increases at full buildout (to 2045) due to development in accordance with the GPU are shown in Table 5.13-8.

Table 5.13-8 General Plan Update Existing and Buildout Population

Planning Area	Existing Population	Buildout Population	Percentage Growth (%)
FOCUS AREAS	**36,777**	**77,650**	**111**
55 Freeway/Dyer Road	9,034	31,050	244
Grand Avenue/17th Street	2,079	7,129	243
South Bristol Street	8,390	19,176	129
South Main Street	6,970	7,643	10
West Santa Ana Boulevard	10,304	12,652	23
ALL OTHER AREAS OF THE CITY	**297,997**	**353,979**	**19**
CITYWIDE TOTAL[1]	**334,774**	**431,629**	**29**

Source: Figures aggregated and projected by PlaceWorks 2020.
1 Total population includes all individuals living in households, institutional group quarters, and non-institutional group quarters.

Population

As shown in Table 5.13-8, the forecast population in 2045 for the entire city would be 431,629. Therefore, the development pursuant to the GPU would increase the population by 29 percent within the plan area. The 55 Freeway/Dyer Road focus area would experience the highest percentage of growth at 244 percent, followed by the Grand Avenue/17th Street focus area that would experience a 243-percent growth. In total, the entire plan area would experience a population increase of 96,855 by 2045.

[2] Buildout to the maximum levels permitted by the proposed land use is not anticipated.

Orange County COG's 2045 population projection for the city is 360,077 persons (see Table 5.13-7). The city's 2045 population growth under the GPU would be approximately 20 percent greater than the Orange County COG's 2045 projections. Thus, the population anticipated in the plan area at full buildout of the proposed GPU would be substantial and potentially significant.

Jobs-Housing Ratio

The buildout projections and jobs-housing ratio due to development in accordance with the GPU are shown in Table 5.13-9.

Table 5.13-9 Comparison of Orange County COG 2045 and GPU Buildout Projections

	Existing Conditions (2019)	Orange County COG 2045 Projection	Full Buildout[1]
Population	334,774	360,077	431,629
Housing Units	78,792	83,385	115,053
Employment	158,980	172,398	170,416
Jobs-Housing Ratio	2.0	2.1	1.5

Source: CDR 2018, PlaceWorks 2020.
[1] From Tables 3-7 and 3-8 and of this Draft PEIR.

The GPU would result in an increase of 36,490 residential units in the city. At buildout, there would be 115,053 units. The forecast housing units at GPU buildout would exceed the Orange County COG growth projections (83,385 housing units, see Table 5.13-9) by 38 percent. It should be noted that the State of California has a shortage of housing. In 2019, Governor Newsom signed several bills aimed to address the need for more housing, including the Housing Crisis Act of 2019 (Senate Bill 330). The GPU addresses the need for additional housing to accommodate population growth in the city. Furthermore, SCAG is in the process of developing the sixth-cycle RHNA allocation plan, which will cover the planning period October 2021 through October 2029. It is planned for adoption by SCAG in October 2020. The final RHNA Allocation Methodology was adopted on March 5, 2020, and included estimated RHNA allocations for the 2021–2029 planning period. The City's allocation is 3,087 housing units (SCAG 2020b). The Housing Element includes several policies to support a variety of housing types and densities to accommodate the requirements of the RHNA. However, even with a statewide shortage in housing and the requirements of the RHNA, exceeding the Orange County COG's housing projection by 38 percent would be a potentially significant impact.

Furthermore, according to Table 5.13-9, Orange County COG projects the City's jobs-housing ratio to be 2.1 in 2045. Under the GPU, development based on the GPU's land use designations would result in a jobs-housing ratio of 1.5, which is lower than the City's existing ratio (2.0) and the ratio projected by Orange County COG (2.1). A ratio of 1.5 would bring the City closer to a more equal distribution of employment and housing. Thus, the population growth resulting directly from the proposed GPU would be offset by the level of employment opportunity provided to the City's residents and workers commuting into Santa Ana.

Conclusion

Implementation of the GPU would directly induce population and employment growth in the area but would improve the jobs-housing balance in the city. Furthermore, the purpose of general plan updates is to accommodate increased growth in a responsible manner. The GPU accommodates future growth in the City by providing for infrastructure and public services to accommodate the projected growth (see Section 5.10, *Hydrology and Water Quality*, Section 5.15, *Public Services*, Section 5.17, *Transportation,* and Section 5.19, *Utilities and Service Systems*). Proposed policies under the GPU and the HOO also ensure that the City provides adequate housing choices for various income levels. For example, Policies 2.3, 2.4, 2.6, and 2.8, of the Housing Element, call for the improvement of housing to provide access to affordable housing to lower- and moderate-income households. However, the increase in population and housing units at buildout exceeds the Orange County COG projections by approximately 20 and 38 percent, respectively, and impacts are considered potentially significant.

Level of Significance Before Mitigation: Impact 5.13-1 is considered potentially significant.

Impact 5.13-2: The proposed GPU would provide more housing opportunities than currently exist. Therefore, implementation of the GPU would not displace people and/or housing. [Threshold P-2]

The purpose of the GPU is to provide orderly growth in the City of Santa Ana through the distribution, location, balance, and extent of land uses. Under the 2045 buildout scenario, the GPU would change the land use designations of 581.1 acres of existing nonresidential land uses to residential uses (see Table 5.13-10). The proposed land use map (see Figure 3-7) identifies land use designations for a variety of housing types and provides for additional residential opportunities in areas that currently do not allow residential uses.

Table 5.13-10 Existing and Proposed Land Use Designations

Area	Existing Residential (Acres)	GPU Residential (Acres)	Increase (Acres)
Grand Avenue/17th Street	28.9	119.7	90.8
55 Freeway/Dyer Road	0	0	0
South Bristol Street	16.7	85.7	69.0
South Main Street	155.7	264.0	108.3
West Santa Ana Boulevard	157.7	176.9	19.2
Balance of City	6,647.9	6,941.7	293.8
		Total	**581.1**

Note: Existing residential acreage includes multifamily residential, single-family residential, and mobile homes and trailer parks.
Proposed GPU residential acreage includes the following land use designations: Corridor Residential, Urban Neighborhood, Low-Density Residential, Low- to Medium-Density Residential, and Medium-Density Residential.

Furthermore, pursuant to Assembly Bill X1 26,[3] passed in 2011, local governments in California cannot seize private property through eminent domain for private development or economic development projects. Local governments can only seize private property through eminent domain for public works projects. Therefore, the GPU would provide more housing opportunities than currently exist and there would be no impact.

Level of Significance Before Mitigation: There would be no impact related to Impact 5.13-2.

5.13.5 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and GPU policies, Impact 5.13-2 would have no impact.

Without mitigation, Impact 5.13-1 would be considered **potentially significant**:

5.13.6 Mitigation Measures

Impact 5.13-1

Full buildout of the GPU would result in a population of 431,629 and the City's 2045 population growth would be approximately 20 percent greater than the Orange County COG's 2045 projections. Furthermore, the City's housing units at buildout would be 115,053, which exceeds the Orange County COG's projection by 38 percent. There are no feasible mitigation measures to mitigate the population and housing growth for the buildout of the GPU.

5.13.7 Level of Significance After Mitigation

Impact 5.13-1

Impacts would be significant and unavoidable at full buildout.

5.13.8 References

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5.14 PUBLIC SERVICES

This section addresses the General Plan Update's impacts to public services providing fire protection and emergency services, police protection, school services, and library services. Park services are addressed in Section 5.15, *Recreation*. Public and private utilities and service systems, including water, wastewater, and solid waste services and systems, are addressed in Section 5.18, *Utilities and Service Systems*.

5.14.1 Fire Protection and Emergency Services

The information in this section is based partly on the following source:

- *Existing Conditions Report for Fire and Police Services,* PlaceWorks, September 2019.

A copy of this report is included in Volume II, Appendix J-a of this Draft Program Environmental Impact Report (PEIR).

5.14.1.1 ENVIRONMENTAL SETTING

Regulatory Background

International Fire Code

The International Fire Code (IFC) is a model code for regulating 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, with topics 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 various other topics. The IFC is issued by the International Code Council, which is an international organization of building officials.

State

California Fire Code

The California Fire Code (CFC; California Code of Regulations, Title 24, Part 9) is based on the 2015 IFC and includes amendments from the State of California fully integrated into the code. The CFC contains fire safety-related building standards that are referenced in other parts of Title 24 of the California Code of Regulations. The CFC is updated once every three years; the 2016 CFC took effect on January 1, 2017.

California Health and Safety Code

Sections 13000 et seq. of the California Health and Safety Code include fire regulations for building standards (also in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

California Occupational Safety and Health Administration

In accordance with the California Code of Regulations, Title 8 Sections 1270 "Fire Prevention" and 6773 "Fire Protection and Fire Fighting Equipment," California Occupational Safety and Health Administration (Cal/OSHA) 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 house sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance, and use of all firefighting and emergency medical equipment.

Local

Orange County Fire Authority Fire Prevention Guideline B-09, Fire Master Plans for Commercial and Residential Development

The Orange County Fire Authority (OCFA) Fire Prevention Guideline B-09 requires new structures to meet standards related to access driveways, siting of hydrants, water supply, and building access, as required by the California Fire Code. The guideline requires specific information be provided during the submittal of plans for development projects to demonstrate compliance with all codes and other regulations governing water availability for firefighting and emergency access to sites and structures within the jurisdictions served by the OCFA. In addition, the guideline requires that plans be reviewed by the OCFA.

City of Santa Ana Municipal Code

Chapter 14, Fire Protection and Prevention and Emergency Services, of the City of Santa Ana's (City's) municipal code states that the City has adopted the CFC 2016 edition. No building permit in the city shall be issued for construction or repair of any building or structure that would result in noncompliance with the requirements of the fire code.

City of Santa Ana Emergency Management

The mission of Emergency Management is to support residents, first responders, and City staff in preparing for and responding to natural or human-caused disasters or acts of terrorism (Santa Ana 2020). Emergency Management is part of Santa Ana Police Department's Homeland Security Division, but works with all City departments, Orange County Fire Authority, Orange County's Emergency Management Division, Santa Ana Unified School District (SAUSD), the American Red Cross, other county departments and agencies, and surrounding cities to provide the highest possible level of preparedness and coordination when disaster strikes (Santa Ana 2020).

Existing Conditions

Planning Framework

OCFA's Fiscal Year 2018–2019 Adopted Budget provides a list of goals and objectives for the budget cycle. OCFA's Executive Management Team identified three primary goals for OCFA to continuously pursue:

- **Service Delivery.** The service delivery model is built on continuous improvement. All services are sustainable through a range of economic environments and focused on the OCFA mission.

- **People.** Promote a highly skilled, accountable, and resilient workforce that is united in OCFA's common mission.

- **Technology.** Implement and use emerging technologies that support the needs of the organization by maximizing operational efficiency and improving quality of service.

To pursue progress for these three goals, priorities have been established for the fiscal year 2018–2019 budget cycle. Some of these priorities include:

- **Organizational Structure.** Implementing organizational structure changes, as approved by the OCFA Board. The goal is to better align the work efforts with the OCFA mission and evolving emergency response parameters and priorities; an Emergency Medical Service department has been established to that end. The organization will be divided into two large bureaus headed by two deputy chief positions.

- **Initiate Projects to Enhance Technologies.** OCFA remains focused on cybersecurity, safety to personnel and systems, and leveraging emerging technologies to enhance services. Technology projects during the fiscal year will have a heavy focus on security as well as upgrades and replacements of existing technology systems.

- **Mission-Driven Culture Training.** Conducting workforce and leadership training designed for the fire service culture and environment unique to the field. Provided by the International Association of Fire Chiefs, the training program curriculum is designed to build adaptiveness, cohesiveness, and resiliency within fire service organizations. The program has been approved by the Department of Homeland Security and the Federal Emergency Management Agency, through the California Office of Emergency Services.

- **Transition to Lexipol Policy Management and Training System.** OCFA will move to a web-based delivery platform and mobile app to house the OCFA policy manual and updates. This change will provide the opportunity to conduct daily training bulletins through two-minute daily training exercises, designed to help personnel learn and apply agency policy content. Further, this system provides for continuous review of new laws, case law, and best practices in the field, resulting in policy guidance and updates specific to California law and regulations (OCFA 2018a).

Department Organization

OCFA is a regional fire service agency that serves 23 cities in Orange County and all unincorporated areas. OCFA protects over 1,680,000 residents. It is organized into seven departments, including the Community Risk Reduction Department and the Operations Department. The City of Santa Ana receives regional fire and emergency services from all OCFA stations and resources; however, 10 primary stations within the City's jurisdiction (listed in Table 5.14-1) routinely serve Santa Ana.

Community Risk Reduction Department

The Community Risk Reduction (CRR) Department, formerly known as Fire Prevention, adopts and enforces codes and ordinances relative to fire and life-safety issues, reviews plans and conducts inspections of construction projects, coordinates annual life safety inspections of all existing commercial buildings, provides long-range analysis of impacts on resources associated with future land use and development, and investigates all fires (OCFA 2019a).

CRR resources dedicated to Santa Ana include an assistant fire marshal, two senior fire prevention specialists, two fire prevention specialists, and an office assistant. One fire prevention analyst is assigned to the Building Department public counter each weekday afternoon. In addition to prevention service, OCFA provides a full-service Fire Investigations section, with five investigators and one police officer.

Operations Department

The Operations Department has seven divisions and nine battalions that include 71 fire stations. Operations provide regional emergency response to all fires, medical aids, rescues, hazardous materials incidents, wildland fire, aircraft fire and rescue services to John Wayne Airport, and other miscellaneous emergencies (OCFA 2019a).

Strategic Services Section

The Strategic Services Section provides strategic and advanced planning functions for OCFA, which includes California Environmental Quality Act (CEQA) review, deployment and resource modeling, analytics and statistical data review, new station placement and agreements, strategic plan, standards of cover, accreditation, and Insurance Services Office and Local Agency Formation Commission coordination. Monitoring land use annexations and associated new road development preplanning are also priorities of the section (OCFA 2019b).

Automatic/Mutual Aid

All fire departments in Orange County participate in an automatic aid agreement to ensure that the closest resources are dispatched to an emergency, regardless of jurisdictional boundaries (OCFA 2018a). Automatic aid includes engines, trucks, paramedics, and battalion chiefs.

Facilities and Staffing

OCFA Operations Division 6 serves the City of Santa Ana. Table 5.14-1, *OCFA Division 6 Fire Stations: Locations, Staffing, and Apparatus,* details the staffing and apparatus for each OCFA fire station in Santa Ana. Figure 5.14-1, *OCFA Division 6 Fire Station Locations,* illustrates the location of these stations within the city.

Table 5.14-1 OCFA Division 6 Fire Stations: Locations, Staffing, and Apparatus

Station	Location	Staffing (total of 3 shifts)	Apparatus
70	2301 Old Grande Street North	3 Fire Captains 3 Fire Apparatus Engineers/Paramedics 3 Firefighters/Paramedics 3 Firefighters	1 Paramedic Engine
71	1029 West 17th Street	6 Fire Captains/Paramedics 6 Fire Apparatus Engineers 6 Firefighters/Paramedics 6 Firefighters	1 Paramedic Engine 1 Paramedic Truck
72	1668 East 4th Street	3 Fire Captains/Paramedics 3 Fire Apparatus Engineers 3 Firefighters/Paramedics 3 Firefighters	1 Paramedic Engine
73	419 South Franklin Street	3 Fire Captains/Paramedics 3 Fire Apparatus Engineers 3 Firefighters/Paramedics 3 Firefighters	1 Paramedic Engine
74	1427 South Broadway	3 Fire Captains/Paramedics 3 Fire Apparatus Engineers 3 Firefighters/Paramedics 3 Firefighters	1 Paramedic Engine
75	120 West Walnut	6 Fire Captains/Paramedics 6 Fire Apparatus Engineers 6 Firefighters/Paramedics 6 Firefighters	1 Paramedic Engine 1 Paramedic Truck
76	950 West MacArthur	3 Fire Captains 3 Fire Apparatus Engineers 6 Firefighters/Paramedics	1 Paramedic Truck
77	2317 South Greenville	3 Fire Captains 3 Fire Apparatus Engineers 6 Firefighters/Paramedics	1 Paramedic Engine
78	501 North Newhope	3 Fire Captains 3 Fire Apparatus Engineers 6 Firefighters/Paramedics	1 Paramedic Engine
79	1320 East Warner	3 Fire Captains 3 Fire Apparatus Engineers 6 Firefighters/Paramedics	1 Paramedic Engine
	Total	**144**	**14**

Source: Medina 2019.

In addition to the staff in Table 5.14-1, a division chief is assigned exclusively to Santa Ana to serve as the city's local fire chief, and three battalion chiefs (one for each of the three 24-hour-shift schedules) provide daily management of station personnel and activities. Furthermore, an administrative captain, administrative assistant, nurse educator, and a fire community relations and education specialist (bilingual) are assigned to serve Santa Ana and the neighboring OCFA communities (Medina 2019).

Funding

The City of Santa Ana signed a 10-year cash contract with OCFA that is valid until 2030. The City has until 2028 to decide whether they want to extend the OCFA contract. Staff, equipment, and facilities are all under the same contract. If there is a major change to the service area within the city (e.g., an annexation), the contract can be amended. The OCFA contract is funded from the City's general fund.

The majority of CRR services are funded through cost-recovery fees. Since CRR services are primarily directed to businesses, developers, architects, and contractors, the fees are charged to the business community and not to individual homeowners and residents.

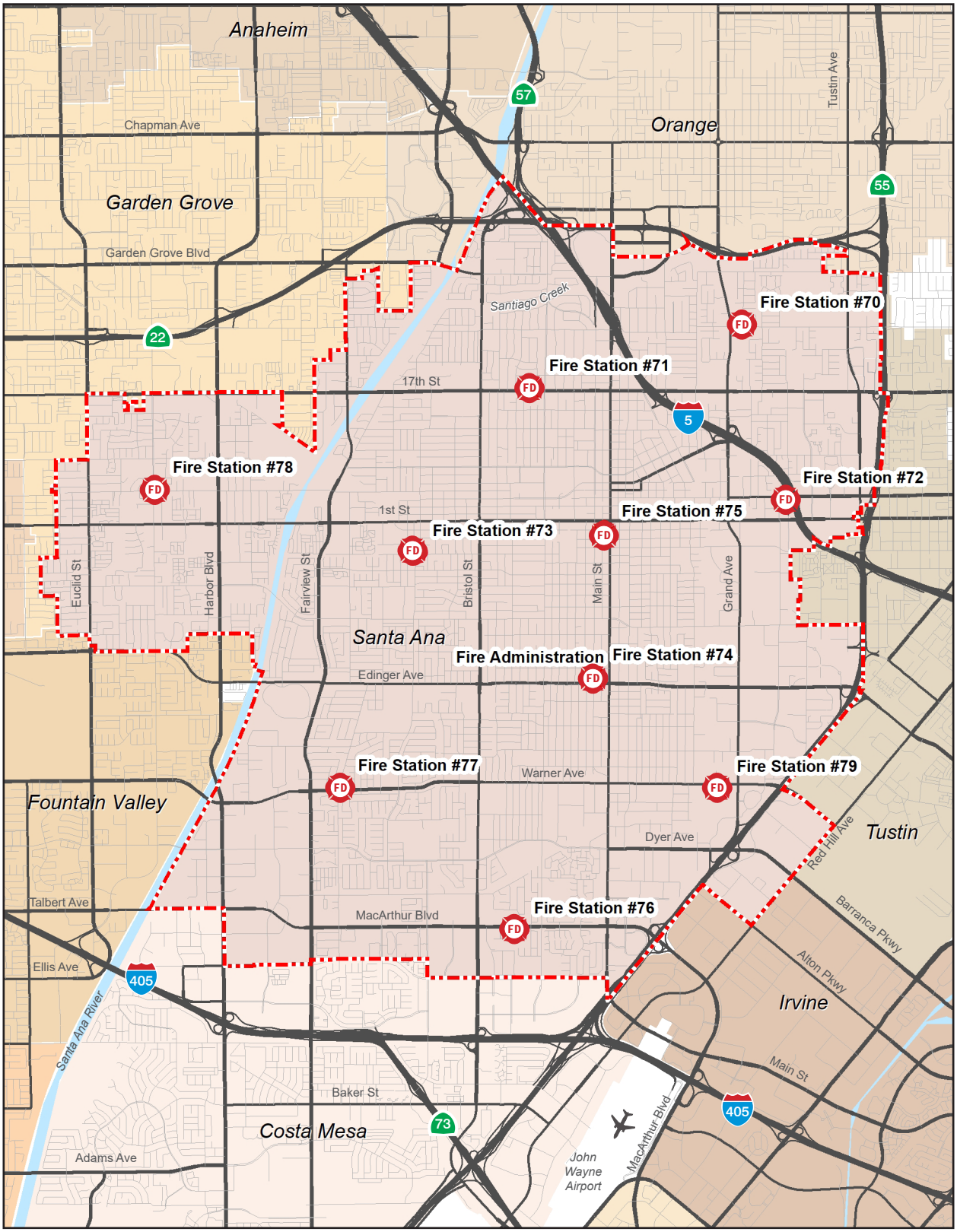
Performance Standards and Measures

Performance Standards

OCFA's response time goal to emergency calls in urban areas is that the first response unit shall arrive at a priority emergency within 7 minutes and 20 seconds, 80 percent of the time. Further, OCFA provides standards of cover for its fire, emergency medical service (EMS), and rescue sections for fire incidents that require high, moderate, and low concentrations of equipment and staff needs, as follows (OCFA 2006):

- **Fire**
  - High concentration—6 engines, 2 trucks, 1 medic, 2 battalion chiefs (BC), 29 personnel should arrive within 15 minutes, 80 percent of the time.
  - Moderate concentration—3 engines, 1 truck, 1 BC, 1 medic, 15 personnel should arrive within 12 minutes, 80 percent of the time.
  - Low concentration—2 engines, 6 personnel should arrive within 10 minutes, 80 percent of the time.
- **EMS**
  - High concentration—2 engines, 2 medics, 8 personnel (4 paramedics) should arrive within 12 minutes, 80 percent of the time.
  - Moderate concentration—1 medic engine/truck or medic car with 1 unit, 4 personnel (2 paramedic) should arrive within 10 minutes, 80 percent of the time.
  - Low concentration—1 unit, 2 personnel (2 emergency medical technicians) should arrive within 7 minutes and 20 seconds, 80 percent of the time.
- **Rescue**
  - High concentration—3 engines, 1 truck, 1 urban search and rescue (USAR) truck, 1 medic, 15 personnel (3 USAR, 2 paramedic) should arrive within 20 minutes, 80 percent of the time.
  - Moderate concentration—1 engine, 1 truck, 1 medic, 8 personnel (2 paramedic) should arrive within 12 minutes, 80 percent of the time.
  - Low concentration—1 engine or truck, 3 personnel should arrive within 7 minutes and 20 seconds, 80 percent of the time.

Figure 5.14-1 - OCFA Division 6 Fire Station Locations



City of Santa Ana Fire Stations (8)

Note: Unincorporated county areas are shown in white.

Source: City of Santa Ana, 2018

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Performance Measures

Table 5.14-2, *Fire Services for Santa Ana,* details fire incident statistics from 2014 through 2017.

Table 5.14-2 Fire Services for Santa Ana

Service Information	2013	2014	2015	2016	2017	2018	Change (2013 To 2018)
Fire Incidents	350	362	393	399	510	565	62%
EMS Incidents	14,487	15,946	17,867	19,216	21,239	21,952	51%
Other Incidents[1]	4,314	3,957	4,071	4,605	4,793	4,703	9%
Total	**19,151**	**20,265**	**22,331**	**24,220**	**26,542**	**27,220**	**41%**

Source: Medina 2019, OCFA 2013; OCFA 2014; OCFA 2015; OCFA 2016; OCFA 2017; OCFA 2018b
[1] Includes cancelled, false alarms, miscellaneous, or service calls.

As shown in Table 5.14-2, fire incidents in the city increased by approximately 41 percent from 2013 to 2018. Calls related to the homeless population have been rising steadily. However, even with rising fire incidents, OCFA meets the performance standard for emergency calls in Santa Ana (Medina 2019).

5.14.1.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment related to fire protection and emergency services if the project would:

FP-1 Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection services.

5.14.1.3 REGULATORY REQUIREMENTS AND GENERAL PLAN POLICIES

Regulatory Requirements

EPARRR FP-1 New buildings are required to meet the fire regulations outlined in California Health and Safety Code (Sections 13000 et seq.).

General Plan Update Policies

The following goals and policies from the proposed elements would be applicable to fire protection and emergency service facilities in the city.

Land Use Element

Goal 1: Provide a land use plan that improves quality of life and respects our existing community.

- **Policy 1.9 Public Facilities and Infrastructure.** Evaluate individual new development proposals to determine if the proposals are consistent with the General Plan, and to ensure that they do not compound existing public facility and service deficiencies.

Public Services Element

Goal 1: Provide quality and efficient facilities that are adequately funded, accessible, safe, and strategically located.

- **Policy 1.1 Maintenance and Design.** Provide and maintain public facilities that reinforce community identity through high quality design.
- **Policy 1.2 Equitable Distribution.** Ensure public services and facilities reflect changing population needs and are equitably distributed.
- **Policy 1.4 Civic Center Enhancements.** Explore opportunities to activate the Civic Center by incorporating social, cultural, entertainment venue programming, and improving infrastructure and connectivity to Downtown and surrounding neighborhoods.
- **Policy 1.6 Facility Locations.** Support land use decisions related to community facilities that preserve quality of life for the City's residents and surrounding community.

Goal 2: Preserve a safe and secure environment for all people and property.

- **Policy 2.1 Public Safety Agencies.** Collaborate with the Police Department and the Fire Authority to promote the implementation of crime prevention through environmental design principles for all development projects.
- **Policy 2.2 Code Compliance.** Require all development to comply with the provisions of the most recently adopted fire and building codes and maintain an ingoing fire inspection program to reduce fire hazards.
- **Policy 2.5 Safety Programs.** Promote early childhood education and prevention programs that improve public safety and maintain ongoing community education opportunities
- **Policy 2.7 Staffing Levels.** Maintain staffing levels for sworn peace officers, fire fighters, emergency medical responders, and civilian support staff to provide quality services and maintain an optimal response time citywide.
- **Policy 2.8 Efficiency Standards.** Ensure that equipment, facilities, technology, and training for emergency responders are updated and maintained to meet modern standards of safety, dependability, and efficiency.
- **Policy 2.9 Quality Employees.** Enhance public safety efforts by actively seeking a diverse and talented pool of public safety candidates who possess the values and skills consistent with those of the community.

Goal 3: Supply, maintain, and expand City services and infrastructure improvements through innovative funding options and sustainable practices.

- **Policy 3.1 Service Partnerships**. Partner with service providers to ensure access to a wide range of state-of-the-art telecommunication systems and services for households, businesses, institutions, public spaces, and public agencies.

5.14.1.4 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance related to fire protection services. The applicable thresholds are identified in brackets after the impact statement.

Population increases forecasted within the plan area for the 2045 scenario (full buildout) of the proposed General Plan Update are shown in Table 5.14-3, *Comparison of Existing Conditions to Proposed Buildout Statistics*.

Table 5.14-3 Comparison of Existing Conditions to Proposed Buildout Statistics

Scenario	Housing Units	Building Square Footage	Jobs
Existing Conditions (2019)	78,792	67,118,596	158,980
Full Buildout (2045)	115,053	72,967,816	170,416
Increase over Existing	*36,261*	*5,849,220*	*11,436*

Impact 5.14-1: The General Plan Update would introduce new structures, residents, and workers into the OCFA service boundaries, thereby increasing the requirement for fire protection facilities and personnel. [Threshold FP-1]

The full buildout scenario of the General Plan Update estimates additional development of up to 36,261 housing units and 5,849,220 building square footage, resulting in a total of 360,077 residents and 170,416 jobs by General Plan Update buildout. With a substantial increase in residents and employees in the area, there would be an increase in demand for fire services.

The current standard for priority emergencies is to arrive within 7 minutes and 20 seconds, 60 percent of the time. Furthermore, OCFA provides standards of cover for its fire, EMS, and rescue sections for high, moderate, and low concentrations ranging between 7 minutes and 20 seconds to 20 minutes. Even with rising fire incidents, OCFA meets the performance standard for emergency calls in the City of Santa Ana (Medina 2019).

The proposed General Plan Update would increase the number of service calls and demand for fire services. However, future development under the General Plan Update would comply with the California Fire and Building Codes, California Health and Safety Code, City ordinances, and applicable national standards. Fire vehicles, staff, equipment, and expansion of existing facilities would be funded by the 10-year cash contract with OCFA that is valid until 2030, which can be extended at the City's discretion. This contract is funded by the City's general fund. Funding from property taxes, as a result of population growth, would be expected to grow roughly proportional to the increase in residential units and non-residential square footage associated with future development under the General Plan Update. Additionally, new businesses would fund the majority of

CRR services through cost-recovery fees. Future development would require approval of Building Plan Check for Site Plan and Emergency Access, as well as approval of a Fire Master Plan, which would ensure projects meet the applicable requirements.

Furthermore, policies in the land use element and public services element of the General Plan Update would ensure adequate protection of public health and safety as they relate to fire and emergency services. Funding for additional staff, equipment, and facilities would come from the City's general fund to serve the growing population. Therefore, impacts to fire protection and emergency services and facilities would be less than significant.

Level of Significance Before Mitigation: With the implementation of RR FP-1, and the policies listed in Section 5.14.1.3, Impact 5.14-1 would be less than significant.

5.14.1.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: Impact 5.14-1.

5.14.1.6 MITIGATION MEASURES

No mitigation measures are required.

5.14.1.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would remain less than significant.

5.14.2 Police Protection

The information in this section is based partly on the following source:

- *Existing Conditions Report for Fire and Police Services,* PlaceWorks, September 2019.

A copy of this report is included in Appendix J-a of this PEIR.

5.14.2.1 ENVIRONMENTAL SETTING

Regulatory Background

Local

Santa Ana Police Department 2019–2024 Strategic Plan

The Santa Ana Police Department's 2019–2024 Strategic Plan is a statement of intent and purpose. Consistent with the mandates and directives of the City of Santa Ana 5-Year Strategic Plan, the intent of the police department's strategic plan is to create a guiding document to help build the envisioned, desired future for the community and police department. Its purpose is to frame the department's goals, priorities, and objectives and to identify the issues, outcomes, and efforts necessary to achieve them. The goals of the plan include:

- Increase the public's safety
- Increase community engagement
- Increase operational excellence and efficiency
- Train, develop, and mentor personnel
- Recruitment, branding, and succession planning

City of Santa Ana Emergency Management

The mission of Emergency Management is to support residents, first responders, and City staff in preparing for and responding to natural or human-caused disasters or acts of terrorism (Santa Ana 2020). Emergency Management is part of Santa Ana Police Department's Homeland Security Division, but works with all City departments, OCFA, Orange County's Emergency Management Division, SAUSD, the American Red Cross, other county departments and agencies, and surrounding cities to provide the highest possible level of preparedness and coordination when disaster strikes (Santa Ana 2020).

Existing Conditions

Planning Framework

The Santa Ana Police Department's 2019–2024 Strategic Plan is a statement of intent and purpose consistent with the mandates and directives of the City of Santa Ana 5-Year Strategic Plan. The purpose of the Police Department's Strategic Plan is to frame its goals, priorities, and objectives and to identify the issues, outcomes, and efforts of the Santa Ana Police Department (Santa Ana 2019a).

Department Organization

The Santa Ana Police Department is organized into four bureaus, three of which are overseen by deputy chiefs and one by a jail administrator:

- Field Operations Bureau
- Investigations Bureau
- Administrative Bureau
- Jail Bureau

Field Operations Bureau

The Field Operations Bureau is the largest and most viable component of the Santa Ana Police Department and consists of the Patrol Division and several specialized units who are first responders to incidents in the city (Santa Ana 2016).

The Patrol Division's primary job is the protection of life and property 24 hours per day, seven days per week; in 2016, officers responded to 105,595 calls for service. The Patrol Division is made up of several programs and units:

- **East Directed Patrol.** East Directed Patrol employs community-oriented policing strategies to serve the residents of Santa Ana and combat crime and quality of life issues in the Northeast and Southeast Districts.

- **Civic Center Patrol.** Civic Center Patrol effectively provides police services in the Civic Center. To further provide resources to the homeless, the Civic Center Patrol collaborated with the Orange County Health Care Agency to implement their Psychological Emergency Response Team program. The Homeless Emergency Assessment Response Team consists of a group of officers who are trained to work with the homeless, providing them with assistance and recommendations for service.

- **Downtown Business Liaison Unit.** The Downton Business Liaison Unit was established in January 2016 and consists of a corporal and three police officers. The unit's responsibilities include developing and strengthening community relations with downtown businesses, residents, and visitors while maintaining a high police presence. The hours of operations cover seven days a week, between 10 am and 7:30 pm.

- **Park Ranger Program.** The Park Ranger Program responds to calls for service in city parks, provides enforcement, and focuses on issues related to activities in parks and on bike trails.

- **Community-Oriented Policing.** The Community-Oriented Policing Unit consists of officers that attend various neighborhood association meetings; organize seven "Early Morning" park cleanups, focusing on homeless paraphernalia and illegal campers in the parks and bike trails; provide education and training to American Youth Soccer Organization coaches about security issues with their leagues and park security; and provide "Active Shooter" training to 25 Parks and Recreation employees.

- **West Directed Enforcement** The West Policing Division's Directed Enforcement Team addresses a wide range of law enforcement concerns, using public, private, and community resources for problem solving. In 2016, the Westend team successfully addressed over 175 community complaints dealing with a variety of issues, such as gang and narcotics activity, municipal code violations, transients, parking issues, and human trafficking.

- **Post-Release Community Supervision Unit.** The Santa Ana Police Department continues to partner with the Orange County Probation Department, imbedding probation officers with a Santa Ana police officer to create the Post-Release Community Supervision Unit. This unit works collaboratively with county and state partners to ensure individuals released from custody are abiding by the terms and conditions of probation. In 2016, the team was involved in over 310 compliance checks; the Post-Release Community Supervision Unit oversees over 500 probationers who reside in the city.

- **Special Units.** The Santa Ana's Mounted Enforcement Unit works in the downtown area to provide a visible and more personable interaction with the community. The Special Weapons and Tactics Team is a group of highly trained police officers and dispatchers prepared to handle critical incidents. The Homeland Security Division works in partnership with the Anaheim Police Department to administer the Urban Area Security Initiative (UASI) grant program, which improves regional capacity to prevent, protect against, respond to, and recover from terrorist incidents and catastrophic events.

- **Traffic.** The Santa Ana Police Department's Traffic Division is tasked with ensuring the safety of residents and visitors that use the network of roadways, walkways, and bikeways in the city (Santa Ana 2016).

Investigation Bureau

The Investigation Bureau is responsible for the timely and thorough investigation of criminal activity throughout the city, and consists of the Crimes Against Persons Division, Criminal Investigations Division, Special Investigations Division, and the Orange County Regional Narcotics Suppression Program. These units conduct investigations into crimes ranging from property thefts to street gangs, cold cases, and missing persons.

- **Crime Against Persons (CAP) Division.** CAP incorporates the Homicide, Felony Assaults, Missing Persons Detail, and Gang Units.

- **Criminal Investigations Division (CID).** CID is responsible for investigating all property crime, robbery, domestic violence, child abuse, and sex-related offenses. The division also includes the Forensic Services Section, which processes all case evidence.

- **Regional Narcotics Suppression Program (RNSP).** RNSP is a countywide major narcotics investigations initiative, administered by the Orange County Sheriff's Department, to which the Santa Ana Police Department provides a variety of personnel, including a commander that serves as the program manager.

- **Special Investigations Division (SID).** The SID is composed of two multiagency task forces led by the Santa Ana Police Department. In addition to the Vice and Narcotics Unit, the Santa Ana Gang Task Force combats organized crime and criminal enterprises with a nexus to the roots of gang issues in the city (Santa Ana 2016).

Administrative Bureau

The Administrative Bureau oversees the Evidence Section, Information Systems Division, the Training Division, the Communications Division, and the Central Distribution Center (CDC).

- **Evidence.** The Evidence Section provides for the proper handling, storage, maintenance, and disposal of law enforcement–held property and evidence.

- **Information Systems.** The Information Systems Division supports the various computerized systems used throughout the police department—from Computer-Aided Dispatch to Mobile Data Computers to police department smartphones.

- **Training.** The Training Division provides high-quality professional training to personnel in an effort to save lives and prevent injury, improve the operational effectiveness of the department, and reduce liability. The Training Division oversees the Background Unit, the Video Production Unit, the Santa Ana Police Athletic and Activity League, and the Academy Tactical Position.

- **Communications.** The Communications Division has two sections: Communications Section, which handles both emergency and nonemergency calls 24/7, and the Telephone Reporting Unit, which serves as a key component for handling reports from victims reporting crimes over the phone and via the internet through E-Reporting. The Communications Section, as the first point of contact, answers approximately 34,680 emergency and nonemergency calls monthly (Santa Ana 2016)

- **Central Distribution Center.** The CDC coordinates and transports vehicles for repair and purchases and issues equipment, uniforms, and office items to employees.

Jail Bureau

The Jail Bureau has three divisions: Jail Administration and Support Services, Jail Operations, and Police Records. The Jail Operations Division is responsible for receiving those in police custody who will eventually be released or booked at the county jail; the Records staff is also responsible for the processing and maintaining of all police and public records pertaining to public safety activities.

- **Jail Administration and Support Services Division.** This division includes a variety of inmate services required by local, state, and federal mandates. Jail records staff are responsible for booking all arrestees from local and contract agencies.

- **Jail Operations Division.** The Jail Operations Division is responsible for receiving those in police custody; the correctional staff supervises the contract agency inmate population housed within the 512-bed jail.

- **Police Records Division.** This division is responsible for the maintenance and storage of all police-related records; in 2016, over 34,400 reports were processed through the division (Santa Ana 2016).

Facilities and Staffing

Facilities

The Santa Ana Police Administrative Building and Jail Facility are conjoined by a large community room available for public meetings.

Police Headquarters is the Administrative Building, which is home to all four bureaus, as well as Police Administration and all supporting units. The Administrative Building has a front counter where individuals can come for police-related business regarding traffic issues and to obtain copies of police reports. Additionally, there are private interview rooms where the public can file a police report. For optimal customer service and privacy, a reception area is open on the second floor for those who wish to meet with detectives regarding their cases. The front lobby is open Monday through Friday from 7:20 am to 5:30 pm.

The Jail Facility's primary function is to house the inmate population; administrative personnel work in the facility to manage and oversee jail operations. The public lobby is open seven days a week from 7 am to 9 pm (Santa Ana 2016).

As shown in Figure 5.14-2, *Santa Ana Police Department Police Facilities,* there are six police facilities in the city:

1. **Santa Ana Police Administrative Building and Jail Facility,** 60 Civic Center Plaza, Santa Ana, California 92702
2. **Jose Vargas Community Affairs Office,** 20 Civic Center Plaza, Santa Ana, California 92701
3. **Santa Ana Regional Transportation Public Safety Office,** 1000 E Santa Ana Boulevard #107, Santa Ana, California 92701
4. **Westend Substation,** 3750 W McFadden Avenue #1, Santa Ana, California 92704
5. **Santa Ana Law Enforcement and Fire Training Center,** 3000 W Edinger Avenue, Santa Ana, California 92702
6. **Southeast Substation,** 1780 E McFadden Avenue #114B, Santa Ana, California 92705 (Santa Ana 2016).

The police department is divided into two policing divisions, East and West, and these are further divided into four districts overseen by two district commanders. Figure 5.14-3, *Santa Ana Police Department Districts*, shows the locations of the districts.

- West Division
  - Westend District, serving all areas north of First Street and west of Flower Street
  - Southcoast District, serving all areas south of First Street and west of Flower Street
- East Division
  - Northeast District, serving all areas north of First Street and east of Flower Street
  - Southeast District, serving all areas south of First Street and east of Flower Street (Santa Ana 2016)

The police department has received funding to implement a family justice center. The center will concentrate on family crime and will offer guidance and education in addition to a facility where family crime reports can be filed. The site for the facility has not yet been determined.

Staffing

As of August 2019, 348 sworn positions and 250 professional staff positions serve the Santa Ana Police Department. The department does not apply a staffing ratio (e.g., officers/population), but instead evaluates performance and needs as summarized herein under "Performance Standards and Measures." Santa Ana, however, is less densely staffed than several neighboring Orange County cities, and substations are more lightly staffed. The Westend Substation at 3750 West Mc Fadden Avenue, and the Santa Ana Regional Transportation Public Safety Office, at 1000 East Santa Ana Boulevard, have planned programs to increase staffing. The police department also runs a recruitment retention plan in colleges to recruit new officers (Paulson 2019).

Funding

Funding for police facilities and staff comes from grants, special revenue funds, and the City's general fund. Furthermore, the City of Santa Ana and the City of Anaheim are assigned as the UASI program's controlling entity for Orange County. UASI assists high-threat, high-density urban areas to build and sustain the capabilities

necessary to prevent, protect against, mitigate, respond to, and recover from acts of terrorism. The UASI program provides financial assistance to address the unique multidisciplinary planning, organization, equipment, training, and exercise needs of high-threat, high-density urban areas (HSG 2019). Most of the police department facilities are close to 20 years old, and the need for capital improvement funding is rising.

Performance Standards and Measures

Performance Standards

The Santa Ana Police Department prioritizes calls as follows:

- **Priority 1.** Emergency calls for situations that are life threatening. Services shall be dispatched immediately.
- **Priority 2.** Calls for situations that threaten the safety of citizens and may or may not include threats to property. Calls of serious crimes that are in progress or have just occurred. Services shall be dispatched immediately.
- **Priority 3.** Calls for situations that are not life threatening and nonemergency that require a timely but not immediate response. Calls should be assigned to units from the district where the call occurs. Follow-up officers may be dispatched from any district.
- **Priority 4.** Routine incidents whose nature is not life threatening and not urgent but require a police response for appropriate documentation and/or action. Calls should be assigned to the officers from the same district as the call unless circumstances would cause undue delay, e.g., a Spanish-speaking caller with no Spanish-speaking officers assigned to the district.
- **Priority 5.** Calls that are routine, nonurgent, or administrative in nature. Calls should be assigned to the officers from the same district as the call unless circumstances would cause undue delay, e.g., a Spanish-speaking caller with no Spanish-speaking officers assigned to the district.

Figure 5.14-2 - Santa Ana Police Department Police Facilities



City of Santa Ana

1 Police Facilities (6)

Note: Unincorporated county areas are shown in white.

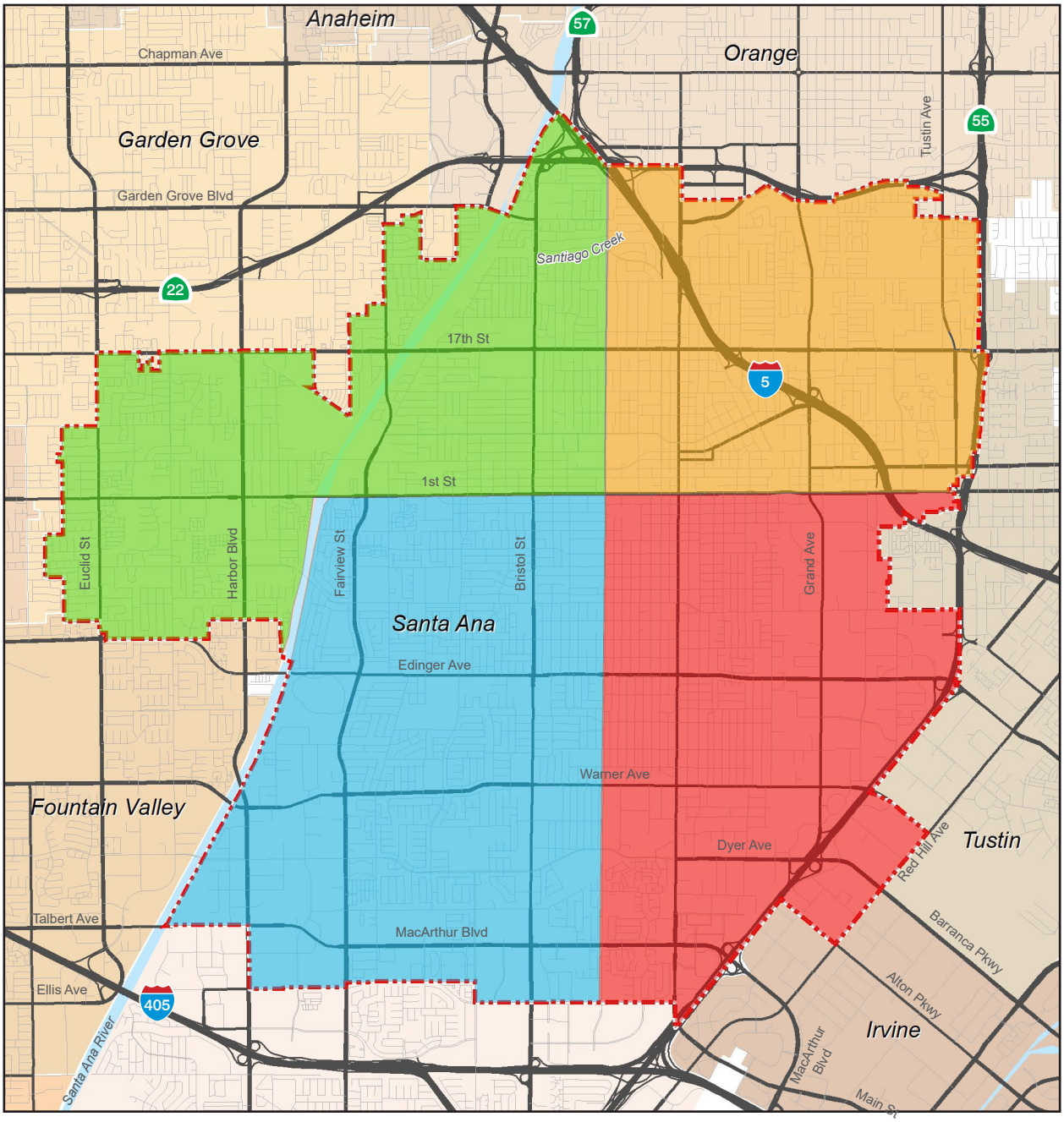
Source: City of Santa Ana, 2018

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Figure 5.14-3 - Santa Ana Police Department Districts



City of Santa Ana

Southcoast & Westend Districts: Commander Ruben Ibarra

Northeast & Southeast Districts: Commander Ken Gominsky

Westend District
West Division (serving all areas north of First Street and west of Flower Street)

Northeast District
East Division (serving all areas north of First Street and east of Flower Street)

Southcoast District
West Division (serving all areas south of First Street and west of Flower Street)

Southeast District
East Division (serving all areas south of First Street and east of Flower Street)

Note: Unincorporated county areas are shown in white.

Source: City of Santa Ana, 2018

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Scale (Miles)

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In addition to call priority, common circumstances that may require an immediate response include the need for preservation of evidence, likelihood of victim/witness interviews, and sensitivity of the situation. Examples of these types of situations include:

- Child molestation reports
- Domestic violence
- Alarm calls where it is likely the call is valid
- Suspects in custody of citizens, or citizens in custody of suspects
- Robberies reported within a reasonable time of occurrence
- Any other circumstances where an expedited response is appropriate
- Accessible firearms and/or weapons in plain view on public property

The Santa Ana Police Department has no set performance standards. However, its response time for priority calls is consistent with the western states' average response time of seven minutes.

Performance Measures

The Santa Ana Police Department monitors the following performance measures to evaluate the effectiveness of the traffic, field operations, animal services, criminal investigations, crimes against persons, special investigations, and jail operations services. Table 5.14-4, *Santa Ana Police Department Performance Measures,* shows the performance measures for each service from the 2015–2016 fiscal year to 2018–2019 fiscal year.

Table 5.14-4 Santa Ana Police Department Performance Measures

Service	Performance Measures	Actual FY 2015–2016	Actual FY 2016–2017	Estimated FY 2017–2018	Objective FY 2018–2019
Traffic	No. of reported collisions	4,858	5,350	TBD	TBD
	No of reported hit and run collisions	1,654	699	TBD	TBD
	No. of traffic violations	13,357	14,720	TBD	TBD
	No. of DUI arrests	691	699	TBD	TBD
	No. of parking violations issued	103,385	106,536	TBD	TBD
	% change in number of reported collisions[1]	8.87%	10.13%	—	—
Field Operations	No. of calls for service	105,195	119,440	TBD	TBD
	No. of reported incidents	34,454	41,530	TBD	TBD
	No. of Priority One calls responded to	3,520	3,762	TBD	TBD
	Average priority response time	7.00 minutes	7.47 minutes	TBD	TBD
	No. of Priority One calls responded to in under 7 minutes	50%	46%	TBD	TBD
	No. of criminal cases filed	4,822	6,148	TBD	TBD
Animal Services	No. of service calls handled	5,602	3,690	4,000	5,000
	No. of enforcement actions taken	210	164	250	250
	No. of animal impounds	2,839	1,852	2,000	2,000

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Table 5.14-4 Santa Ana Police Department Performance Measures

Service	Performance Measures	Actual FY 2015–2016	Actual FY 2016–2017	Estimated FY 2017–2018	Objective FY 2018–2019
	No. of educational presentations given	1	1	2	3
	No. of spay/neuter events held	0	0	0	0
	No. of telephone calls handled	8,143	7,379	8,000	8,000
Criminal Investigations	No. of cases presented to DA by Prosecution Unit	5,431	6,700	6,600	6,500
	No. of business/community meetings	6	5	5	5
	No. of community awareness presentations	16	12	12	12
	No. of cases refused by the DA Office	715	850	750	750
	No. of Special Enforcement operations	43	45	45	40
	Average monthly arrest by Detectives	21	20	20	20
	% rate of criminal charges	87%	85%	86%	85%
	No. of arrests by Detectives during Special Enforcement Operations	49	20	40	30
Crimes Against Persons	Part I Crime Committed	10,204	10,516	1% reduction	1% reduction
	Part I Crime Cases Cleared	2,603	1,421	TBD	TBD
	Part I Crime Clearance Rate	25.50%	13%	TBD	TBD
	Total Arrests	814	1,382	TBD	TBD
	Probation Home Compliance Checks	330	534	180	180
	Firearms Seized	80	111	TBD	TBD
	Community Outreach Activities	80	111	48	48
Special Investigations	No. of career criminal arrests	78	33	65	75
	No. of weapons seized	11	15	15	25
	No. of federal weapons violations cases reviewed	12	149	175	180
	No. of surveillance operations	105	60	75	80
	No. of search warrants issued	41	53	50	50
	No. of confidential human sources cultivated	10	10	12	15
	No. of federal weapons violations cases adopted	7	21	20	25

Table 5.14-4 Santa Ana Police Department Performance Measures

Service	Performance Measures	Actual FY 2015–2016	Actual FY 2016–2017	Estimated FY 2017–2018	Objective FY 2018–2019
Jail Operations	No. of inmates processed	8,224	8,227	7,611	7,611
	No. of inmates fast-booked to OCJ	4,281	4,424	4,181	4,181
	No. of visitors processed	19,464	15,378	14,370	14,370
	No. of Pay-To-Stay Program Revenue	N/A	146,370	130,000	130,000
	% of compliance with regulatory agencies	100%	100%	100%	100%
	No. of DNA collected or verified	1,454	3,035	3,116	3,116
	No. of registrants processed	1,700	5,422	6,194	6,194
	No. of HiSet/GED graduates	N/A	11	60	60

Source: Santa Ana 2019b.
Note: DA = District Attorney, DUI = Driving Under the Influence, FY = Fiscal Year, OCJ = Orange County Jail, TBD = To Be Determined
[1] Percentages are approximate

Table 5.14-5, *Santa Ana Police Department Average Response Times*, shows the current average response time for the different call priorities.

Table 5.14-5 Santa Ana Police Department Average Response Times

Priority	Time
Priority 1	7m 03s[1]
Priority 2	10m 22s
Priority 3	30m 32s
Priority 4	35m 07s
Priority 5	52m 59s

Source: Paulson 2019.
[1] m = minute, s = second

Deputy Chief Paulson indicated that the current response time for Priority 1 calls meets the western states' average as well as the needs of the Santa Ana community.

Homelessness-related calls increased by approximately 10,000 from 2017 to 2018, and this is an expanding issue in Santa Ana. The police department has collaborated with the Public Works and Parks and Recreational departments to create a quality-of-life program to address increased homelessness-related demands (Paulson 2019).

Additionally, the City currently partners with local nonprofits, neighboring cities, and the county to reduce and address homelessness. Since 1998, the County of Orange has coordinated a comprehensive regional Continuum of Care strategy that includes the participation of all 34 cities in Orange County, county agencies, the county's homeless service providers, and other community groups (including nonprofits, local governmental agencies, faith-based organizations, the homeless and formerly homeless, interested business leaders, schools, and many other stakeholders) to identify the gaps and unmet needs of the county's homeless (Santa Ana 2019c).

School District Police Services/Campus Safety

School districts in Santa Ana have police services and school safety programs. For instance, SAUSD has its own police department, whose mission is to provide for the safety and security of everyone who attends and works at school facilities throughout the district (SAUSD 2019a). Furthermore, the Garden Grove Unified School District (GGUSD) provides various student and campus safety resources, such as district and campus safety initiatives, partnerships with law enforcement (Garden Grove Police Department, Fountain Valley Police and Fire Departments, OCFA, Orange County Sherriff's Department, Santa Ana Police and Fire Departments, and Westminster Police Department), and mental health resources (GGUSD 2019a). The Tustin Unified School District (TUSD) has security/campus safety officers who patrol the district and provide security for students, district property, and employees (TUSD 2019).

5.14.2.2 THRESHOLDS OF SIGNIFICANCE

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

PP-1 Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection services.

5.14.2.3 REGULATORY REQUIREMENTS AND GENERAL PLAN POLICIES

Regulatory Requirements

No existing regulations are applicable to impacts associated with police protection.

General Plan Update Policies

The following goals and policies from the proposed elements would be applicable to police facilities in the city.

Land Use Element

Goal 1: Provide a land use plan that improves quality of life and respects our existing community.

- **Policy 1.9 Public Facilities and Infrastructure.** Evaluate individual new development proposals to determine if the proposals are consistent with the General Plan, and to ensure that they do not compound existing public facility and service deficiencies.

Public Services Element

Goal 1: Provide quality and efficient facilities that are adequately funded, accessible, safe, and strategically located.

- **Policy 1.1 Maintenance and Design.** Provide and maintain public facilities that reinforce community identity through high quality design.
- **Policy 1.2 Equitable Distribution.** Ensure public services and facilities reflect changing population needs and are equitably distributed.
- **Policy 1.4 Civic Center Enhancements.** Explore opportunities to activate the Civic Center by incorporating social, cultural, entertainment venue programming, and improving infrastructure and connectivity to Downtown and surrounding neighborhoods.
- **Policy 1.6 Facility Locations.** Support land use decisions related to community facilities that preserve quality of life for the City's residents and surrounding community.
- **Policy 1.10 Fair Share.** Require that new development pays its fair share of providing improvements to existing or creation of new public facilities and their associated costs and services.

Goal 2: Preserve a safe and secure environment for all people and property.

- **Policy 2.1 Public Safety Agencies.** Collaborate with the Police Department and the Fire Authority to promote the implementation of crime prevention through environmental design principles for all development projects.
- **Policy 2.3 Crime Prevention.** Coordinate, partner, and build relationships with community members and stakeholders to develop and implement crime prevention strategies through restorative practices that focus on rehabilitation, community service, and public safety.
- **Policy 2.4 Community Partnerships.** Provide alternative methods to improve police services that support community partnerships, build public trust, and proactively address public safety issues.
- **Policy 2.5 Safety Programs.** Promote early childhood education and prevention programs that improve public safety and maintain ongoing community education opportunities.
- **Policy 2.7 Staffing Levels.** Maintain staffing levels for sworn peace officers, fire fighters, and emergency medical responders, and civilian support staff to provide quality services and maintain an optimal response time citywide.
- **Policy 2.8 Efficiency Standards.** Ensure that equipment, facilities, technology, and training for emergency responders are updated and maintained to meet modern standards of safety, dependability, and efficiency.

- **Policy 2.9 Quality Employees.** Enhance public safety efforts by actively seeking a diverse and talented pool of public safety candidates who possess the values and skills consistent with those of the community.

Goal 3: Supply, maintain, and expand City services and infrastructure improvements through innovative funding options and sustainable practices.

- **Policy 3.1 Service Partnerships**. Partner with service providers to ensure access to a wide range of state-of-the-art telecommunication systems and services for households, businesses, institutions, public spaces, and public agencies.

5.14.2.4 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance related to police protection services. The applicable thresholds are identified in brackets after the impact statement.

Population increases forecasted within the plan area for the 2045 scenario (full buildout) of the proposed General Plan Update are shown in Table 5.14-3.

Impact 5.14-2: The General Plan Update would introduce new structures, residents, and workers into the Santa Ana Police Department service boundaries, thereby increasing the requirement for police protection facilities and personnel. [Threshold PP-1]

The full buildout scenario of the General Plan Update estimates additional development of up to 36,261 housing units and 5,849,220 building square footage, resulting in a total of 360,077 residents and 170,416 jobs by General Plan Update buildout. With a substantial increase in residents and employees in the area, there would be an increase in demand for police services.

The Santa Ana Police Department does not apply a staffing ratio but instead evaluates performance and needs. Compared to several neighboring Orange County cities, Santa Ana is relatively understaffed with substations being more lightly staffed. One of the goals of the Santa Ana Police Department 2019–2024 Strategic Plan is recruitment, branding, and succession planning. Strategies to meet this goal include filling all police officer and professional staff vacancies and streamlining efficiency in hiring process methodologies. As the General Plan Update would increase growth in the city, the Santa Ana Police Department would need to hire additional officers to accommodate this growth. However, staff needs could vary greatly based on crime trends, special events, and city needs. As growth in population would occur over time, the additional officers would not be hired at the same time. Moreover, the hiring of the additional officers would depend on the department's assessed needs, based on the growing number of calls for service or decreases in average response times in the future.

Funds for additional police facilities and staff would come from grants, special revenue funds, and the City's general fund. Funding from property taxes, as a result of population growth, would be expected to grow roughly proportional to any increase in residential units, businesses, and/or industrial/manufacturing in the city. The additional demand for police services generated within the city would be satisfied through these sources. Moreover, as part of the project review process for future development, the Santa Ana Police Department may

require project design features to improve security on site. Additional design features to address Santa Ana Police Department's service standards will be incorporated as conditions of approval for future development..

Furthermore, the goals and policies in the land use element and public services element of the General Plan Update would ensure adequate protection and police services.

Level of Significance Before Mitigation: With the implementation of the policies listed in Section 5.14.2.3, Impact 5.14-2 would be less than significant.

5.14.2.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, the following impact would be less than significant: Impact 5.14-2.

5.14.2.6 MITIGATION MEASURES

No mitigation measures are required.

5.14.2.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would remain less than significant.

5.14.3 School Services

The information in this section is based partly on written questionnaire responses from:

- Jeremy Cogan, Director of Facilities Planning, and Kathleen Gil, Facilities Planning Technician, Santa Ana Unified School District, March 11, 2020
- Jerry Hills, Facilities Director, Garden Grove Unified School District, March 10, 2020
- Tom Rizzuti, Director, Facilities and Planning, Tustin Unified School District, April 17, 2020

Copies of these responses are included in Appendix J-b of this PEIR.

5.14.3.1 ENVIRONMENTAL SETTING

Regulatory Background

California State Assembly Bill 2926: School Facilities Act of 1986

To assist in providing school facilities to serve students generated by new development, Assembly Bill (AB) 2926 was enacted in 1986 and authorizes a levy of impact fees on new residential and commercial/industrial development. The bill was expanded and revised in 1987 through the passage of AB 1600, which added Sections 66000 et seq. to the Government Code. Under this statute, payment of impact fees by developers serves as CEQA mitigation to satisfy the impact of development on school facilities.

Senate Bill 50 (Chapter 407 of Statutes of 1998)

Senate Bill (SB) 50 sets forth a state school facilities construction program that includes restrictions on a local jurisdiction's ability to impose mitigation for a project's impacts on school facilities in excess of fees set forth in Education Code 17620. It establishes three potential limits for school districts, depending on the availability of new school construction funding from the state and the needs of the individual school districts. Level 1 is the general school facilities fees imposed in accordance with California Government Code Section 65995, as amended. Level 2 and 3 fees represent 50 percent or 100 percent of a school district's school facility construction costs per new residential construction, as authorized by Government Code Sections 65995.5, 65995.6, and 65995.7. On February 24, 2016, the State Allocation Board adjusted the maximum level 1 residential school fee to $3.48 per square foot for residential development; $0.56 per square foot for commercial, industrial, and senior housing projects; and $0.406 per square foot for hotel/motel projects. Development fees authorized by SB 50 are deemed by Section 65996 of the California Government Code to be "full and complete school facilities mitigation."

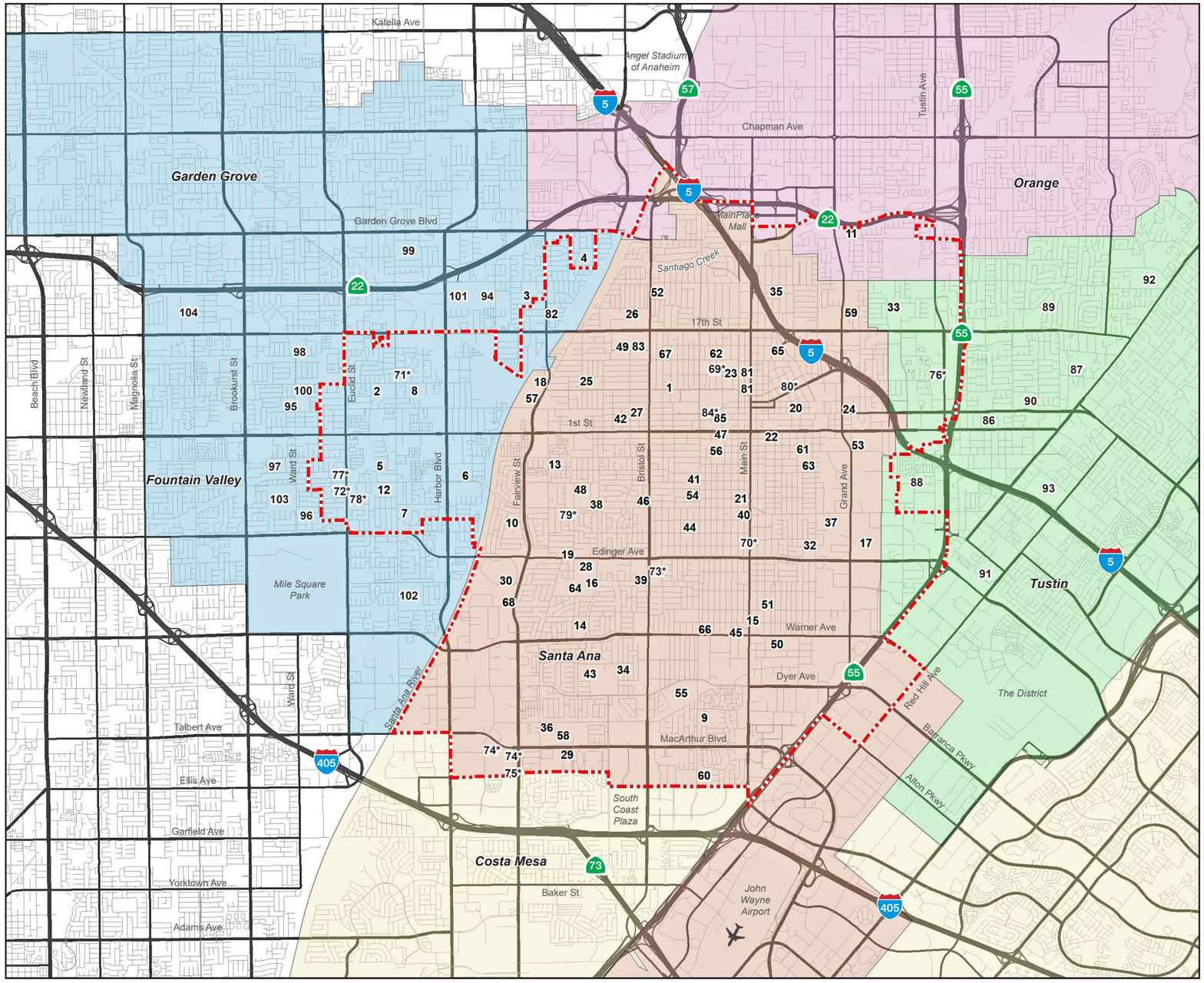
Existing Conditions

Students in Santa Ana are served by the SAUSD, GGUSD, Orange Unified School District (OUSD), and TUSD. Additionally, there are a number of charter and private schools throughout the city. Figure 5.14-4, *School Locations*, shows the four district boundaries and school locations serving the city.

Santa Ana Unified School District

SAUSD covers approximately 24 square miles and encompasses portions of Santa Ana, Irvine, Costa Mesa, Newport Beach, Tustin, and unincorporated Orange County. SAUSD currently has 50,124 students in grades kindergarten (K) through 12 (2019–2020 academic year) (CDE 2013a).

Figure 5.14-4 - School Locations



City of Santa Ana * Private School

School Districts

Santa Ana USD Tustin USD Garden Grove USD Orange USD

1, Heroes Elementary
2, Rosita Elementary
3, Doig Intermediate
4, Riverdale Elementary
5, Heritage Elementary
6, Edward Russell Elementary
7, Newhope Elementary
8, R. F. Hazard Elementary
9, Douglas MacArthur Fundamental Intermediate
10, Andrew Jackson Elementary
11, Fairhaven Elementary
12, Stephen R. Fitz Intermediate
13, Abraham Lincoln Elementary
14, John Adams Elementary
15, Cesar E. Chavez High
16, Carl Harvey Elementary
17, Century High
18, Community Day Intermediate and High
19, Diamond Elementary
20, Garfield Elementary
21, Franklin Elementary
22, Edward B. Cole Academy
23, El Sol Santa Ana Science and Arts Academy
24, Frederick Remington Elementary
25, Fremont Elementary
26, Gonzalo Feicitas Mendez Fundamental Intermediate
27, George Washington Carver Elementary
28, Gerald P. Carr Intermediate
29, Greenville Fundamental Elementary
30, Hector Godinez Fundamental High School
31, Orange County Educatoinal Arts Academy
32, Madison Elementary
33, John Muir Fundamental Elementary
34, Jefferson Elementary
35, Hoover Elementary
36, Jim Thorpe Fundamental
37, John F. Kennedy Elementary
38, Lorin Griset Academy
39, Jose Sepulveda Elementary
40, Julia C. Lathrop Intermediate
41, Lowell Elementary
42, Lydia Romero-Cruz Elementary
43, McFadden Intermediate
44, Martin Elementary
45, Manuel Esqueda Elementary
46, Martin Luther King Jr. Elementary
47, Martin R. Heninger Elementary
48, Monte Vista Elementary
49, Middle College High
50, Monroe Elementary
51, Thomas A. Edison Elementary
52, Santago Elementary
53, Raymond A. Villa Fundamental Intermediate
54, Pio Pico Elementary
55, Saddleback High
56, Santa Ana high
57, Spurgeon Intermediate
58, Segerstrom High
59, Sierra Intermediate
60, Taft Elementary
61, Thedore Roosevelt Elementary
62, Willard Intermediate
63, Walker Elementary
64, Valley High
65, Wallace R. Davis Elementary
66, Washington Elementary
67, Wilson Elementary
68, Mitchell Child Development Center
69, Storybook Preschool*
70, Saint Anne School*
71, Santa Clara School*
72, Saint Barbara Elementary*
73, Mater Dei High School*
74, Calvary Chapel High*
75, Maranatha Christian Academy*
76, Calvary Christian School*
77, Ari Guiragos Minassian Armenian*
78, Bethel Baptist*
79, School of Our Lady*
80, Saint Joseph Elementary*
81, Orange County School of the Arts
82, Samueli Academy
83, Santa Ana College
84, Advanced Learning Academy*
85, Nova Academy Early College High
86, Estock Elementary
87, Guin Foss Elementary
88, Heidman Elementary
89, Loma Vista Elementary
90, Columbus Tustin Middle
91, Currie Middle
92, Foothill High
93, Tustin High
94, Clinton Elementary
95, Post Elementary
96, Paine Elementary
97, Anthony Elementary
98, Morningside Elementary
99, Peters Elementary
100, Irvine Intermediate
101, Santiago High
102, Los Amigos High
103, La Quinta High
104, Bolsa Grande High

0 1
Scale (Miles)

Source: ESRI, 2020; School Data: City of Santa Ana

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The SAUSD schools that serve students in Santa Ana are shown in Figure 5.14-4. Table 5.14-6, *SAUSD Schools Serving Santa Ana Residents,* lists all the schools in SAUSD, their 2019–2020 enrollment, and capacities. There are 33 elementary schools, a K–8 school, 8 intermediate schools, 9 high schools, and the REACH Academy. As shown, for the 2019–2020 academic year, all schools had sufficient capacity for enrollment.

Table 5.14-6 SAUSD Schools Serving Santa Ana Residents

School	Grades	Location	Academic Year 2019–2020 Enrollment	Capacity
John Adams Elementary School	K–5	2130 South Raitt Street	411	650
Advanced Learning Academy (ALA)	3–6	335 East Walnut Street	108	300
Advanced Learning Academy Early College	7–8	1325 E. Fourth Street	253	525
Gerald P. Carr Intermediate School	6–8	2120 West Edinger Avenue	1,424	2,135
George Washington Carver Elementary School	K–3	1401 West Santa Ana Boulevard	694	1,475
Century High School	9–12	1401 South Grand Avenue	1,565	3,744
Cesar E. Chavez High School	9–12	2128 Cypress Avenue	85	576
Wallace R. Davis Elementary School	K–5	1405 French Street	513	925
Diamond Elementary School	K–	1450 South Center Street	470	750
Thomas A. Edison Elementary School	K–5	2063 Orange Avenue	463	1,000
Manuel Esqueda Elementary School	K–5	2240 South Main Street	1,039	1,200
Benjamin Franklin Elementary School	K–5	210 West Cubbon Street	377	325
John C. Fremont Elementary School	K–5	1930 West Tenth Street	480	775
James A. Garfield Elementary School	K–5	850 Brown Street	664	875
Godinez Fundamental High School	9–12	3002 Centennial Road	2,341	3,744
Greenville Fundamental School	K–5	3600 South Riatt Street	1,002	1,100
Lorin Griset Academy	9–12	1915 West McFadden Avenue	309	648
Carl Harvey Elementary School	K–5	1635 South Center Street	399	650
Martin R. Heninger Elementary School	K–5	417 West Walnut Street	1,114	1,275
Heroes Elementary School	K–5	1111 West Civic Center Drive	526	725
Herbert Hoover Elementary School	K–5	408 East Santa Clara Avenue	335	575
Andrew Jackson Elementary	K–5	1143 South Nakoma Drive	672	1,300
Thomas Jefferson Elementary School	K–5	1522 West Adam Street	661	975
John F. Kennedy Elementary School	K–5	1300 East McFadden Avenue	581	925
Dr. Martin Luther King Jr. Elementary School	K–5	1001 Graham Lane	609	925

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Table 5.14-6 SAUSD Schools Serving Santa Ana Residents

School	Grades	Location	Academic Year 2019–2020 Enrollment	Capacity
Julia C. Lathrop Technology Magnet Intermediate School	6-8	1111 South Broadway	876	1,820
Abraham Lincoln Elementary School	K–5	425 South Sullivan Street	691	1,400
James Russell Lowell Elementary School	K–5	700 South Flower Street	630	1,050
Douglas MacArthur Fundamental Intermediate School	6–8	600 West Alton Avenue	1,190	1,540
James Madison Elementary School	K–5	1124 Hobart Street	990	1,325
Glenn L. Martin Elementary School	K–5	939 West Wilshire Avenue	620	1,050
McFadden Intermediate School	6–8	2701 South Raitt Street	1,141	2,065
Gonzalo and Felicitas Mendez Fundamental Intermediate School	6–8	2000 North Bristol Street	1,428	1,890
Middle College High School	9–12	1530 West 17th Street	348	540
James Monroe Elementary School	K–5	417 East Central Avenue	272	550
Monte Vista Elementary School	K–5	2116 West Monte Vista Avenue	458	850
John Muir Fundamental Elementary School	K–5	1951 Mabury Street	787	1,175
Pio Pico Elementary School	K–5	931 West Highland Street	513	800
REACH Academy	—	804 North Fairview Road	41	540
Romero-Cruz Academy	K–8	2701 West Fifth Street	1,009	1,525
Roosevelt Elementary School	K–5	501 Halladay Street	558	1,150
Saddleback High School	9–12	2802 South Flower Street	1,491	3,204
Santa Ana High School	9–12	520 West Walnut Street	3,237	4,212
Santiago Elementary School	K–5	2212 North Baker Street	1,103	1,250
Segerstrom High School	9–12	2301 West High School	2,472	3,024
Jose A. Sepulveda Elementary School	K–5	1801 South Poplar Street	342	625
Sierra Preparatory Academy	6–8	2021 North Grand Avenue	673	1,680
Taft Elementary School	K–5	500 Keller Avenue	560	1,325
Jim Thorpe Fundamental Elementary School	K–5	2450 West Alton Avenue	886	1,050
Valley High School	9–12	1801 South Greenville Street	2,222	4,032
Raymond A. Villa Fundamental Intermediate School	6–8	1441 East Chestnut Avenue	1,375	1,575
Adeline C. Walker Elementary School	K–5	811 East Bishop Street	399	575
		Total	**43,407**	**69,919**

Source: Cogan and Gil 2020.

Funding

SAUSD is funded primarily by federal and state grant programs or local and state taxes. In particular, the California School Facility Program was first implemented in 1998 and offers state funding in the form of per-pupil grants, with supplemental grants for site development, site acquisition, and other project-specific costs. SAUSD receives funding from School Facility Program's various programs, including New Construction, Critically Overcrowded Schools Program, Overcrowding Relief Grant Program, Modernization, and the Career Technical Education Program (SAUSD 2015).

Measure I, a $232-million general obligation bond, was passed on November 6, 2018 (Ballotpedia 2018). Funds from Measure I are being used to replace relocatable classrooms, construct new facilities, renovate existing facilities, and provide funding for other SAUSD facility needs. Measure I makes SAUSD eligible for $62 million in matching funds from the state (SAUSD 2019b).

In addition to these funds, SAUSD also charges the following developer impact fees (Level 1 School Impact Fees) pursuant to SB 50 (Cogan and Gil 2020):

- Residential Development Fees - $4.08/square foot
- Commercial Development Fees - $0.66/square foot

Additionally, self-storage construction projects are charged $0.027 per square feet (SAUSD 2019c).

Student Generation

School districts project the number of students that will be generated by new residential development by using district-specific rates to plan for future facilities expansion or construction. The generation rates used by SAUSD are reflected in Table 5.14-7, *SAUSD Student Generation Rates*.

Table 5.14-7 SAUSD Student Generation Rates

	Student Generation Rate	
School Type	Single-Family Rate	Multifamily Rate
Elementary School (K–5)	0.4028	0.1937
Intermediate School (6–8)	0.2203	0.1111
High School (9–12)	0.2868	0.1427

Source: Cogan and Gil 2020.

Garden Grove Unified School District

The GGUSD schools that serve students in Santa Ana are shown in Figure 5.14-4. Table 5.14-8, *GGUSD Schools Serving Santa Ana Residents,* lists all the schools in the GGUSD that service Santa Ana residents, their 2019–2020 enrollments, and capacities. There are 13 elementary schools, 3 middle/intermediate schools, and 4 high schools.

Table 5.14-8 GGUSD Schools Serving Santa Ana Residents

School	Grades	Location	Academic Year 2019–2020 Enrollment	Capacity[1]
R. F. Hazard Elementary School	K–6	4218 West Hazard Avenue	432	700
Rosita Elementary School	K–6	4726 West Hazard Avenue	503	725
Heritage Elementary School	K–6	426 South Andres Place	506	850
Edward Russell Elementary School	K–6	600 South Jackson	492	875
Newhope Elementary School	K–6	4419 West Regent Drive	394	600
Clinton Elementary School	K–6	13641 Clinton Street	595	1,075
Post Elementary School	K–6	14641 Ward Street	462	650
Paine Elementary School	K–6	15792 Ward Street	442	575
Monroe Elementary School	K–6	16225 Newhope Street	416	500
Riverdale Elementary School	K–6	13222 Lewis Street	558	725
Anthony Elementary School	K–6	15320 Pickford Street	359	550
Morningside Elementary School	K–6	10521 Morningside Drive	432	600
Peters Elementary School	K–6	13162 Newhope Street	775	1,450
Stephen R. Fitz Intermediate School	7–8	4600 West McFadden Avenue	640	783
Doig Intermediate School	7–8	12752 Trask Avenue	765	918
Irvine Intermediate School	7–8	10552 Hazard Avenue	674	891
Santiago High School	9–12	12342 Trask Avenue	1,967	2,403
Los Amigos High School	9–12	16566 Newhope Street	1,741	2,079
La Quinta High School	9–12	10372 McFadden Avenue	2,145	2,457
Bolsa Grande High School	9–12	9401 Westminster Avenue	1,916	1,890
		Total	**16,214**	**21,296**

Source: Hills 2020.
[1] Capacity includes permanent and portable structures.

The 69 schools in the GGUSD range in age from 37 to 89 years old. By the end of the current school year, more than half of GGUSD schools will be more than 50 years old, thus lacking many of the amenities of schools constructed more recently. The functional life expectancy of school facilities with good maintenance is 50 years (GGUSD 2019b).

Funding

Measure A, the school bond measure approved by GGUSD voters on June 8, 2010, provided $250 million for modernization projects for district schools and enabled GGUSD to secure as much as $200 million in additional state-matching funds. As an added funding bonus, GGUSD obtained an additional $47 million in supplemental school improvement grants, increasing the total projected Measure A budget to $503 million (GGUSD 2019c).

Per SB 50, GGUSD charges developer fees of $3.79 per square foot for residential construction; $0.61 per square foot for senior citizen housing and commercial/industrial development; and $0.06 per square foot of assessable space for self-storage development. The residential and commercial development fees are proposed to increase to $4.09 and $0.66 for residential and senior citizen housing and commercial/industrial, respectively, on May 16, 2020 (Hills 2020).

Student Generation

School districts project the number of students that will be generated by new residential development by using district-specific rates to plan for future facilities expansion or construction. The generation rates used by GGUSD are reflected in Table 5.14-9, *GGUSD Student Generation Rates*.

Table 5.14-9 GGUSD Student Generation Rates

	Student Generation Rate	
School Type	**Single-Family Rate**	**Multifamily Rate**
Elementary School (TK–6)	0.2989	0.2296
Intermediate School (7–8)	0.0969	0.0734
High School (9–12)	0.2029	0.1421

Source: Hills 2020

Orange Unified School District

OUSD provides school services to areas in the northern portion of Santa Ana. OUSD offers one elementary school (K–6) to the residents of Santa Ana. The Fairhaven Elementary school has an enrollment of 517 students (CDE 2013b). There are no planned improvements for the school.

Measure S will help OUSD provide $288 million in locally controlled funds to repair and upgrade OUSD's four comprehensive high schools. Measure S will help OUSD qualify for state-matching funds of up to $60 million (OUSD 2019a).

Per SB 50, OUSD charges developer fees of $3.79 per square foot for residential construction larger than 500 square feet, and $0.61 per square foot for commercial and industrial development (OUSD 2019b).

Student Generation

School districts project the number of students that will be generated by new residential development by using district-specific rates to plan for future facilities expansion or construction. The generation rates used by OUSD are reflected in Table 5.14-10, *OUSD Student Generation Rates*.

Table 5.14-10 OUSD Student Generation Rates

	Student Generation Rate	
School Type	**Single-Family Rate**	**Multifamily Rate**
Elementary School (K–5)	0.2792	0.1901
Intermediate School (6–8)	0.0741	0.0598
High School (9–12)	0.1389	0.1236

Tustin Unified School District

TUSD provides school services to areas of Santa Ana. The TUSD schools that serve students in Santa Ana are shown in Figure 5.14-4. Table 5.14-11, *TUSD Schools Serving Santa Ana Residents,* lists all the schools in TUSD

that serve Santa Ana residents, their 2019–2020 enrollment, and capacities. There are four elementary schools, two middle schools, and two high schools that serve Santa Ana residents.

Table 5.14-11 TUSD Schools Serving Santa Ana Residents

School	Grades	Location	Academic Year 2019–2020 Enrollment	Capacity
Estock Elementary School	TK–5	14741 N B Street	516	525
Guin Foss Elementary School	TK–5	18492 Vanderlip Avenue	427	375
Heidman Elementary School	TK–5	15571 Williams Street	606	725
Loma Vista Elementary School	TK–5	13822 Prospect Avenue	469	589
Columbus Tustin Middle School	6–8	17952 Beneta Way	808	821
Currie Middle School	6–8	1402 Sycamore Avenue	591	648
Foothill High School	9–12	19251 Dodge Avenue	2,424	2,265
Tustin High School	9–12	1171 El Camino Real	2,282	2,318
		Total	**8,123**	**8,266**

Source: Rizzuti 2020.

Per SB 50, TUSD charges developers per square foot for residential construction and commercial and industrial development. The TUSD Board of Education acted on April 13, 2020, to increase residential development fees from $3.79 per square foot to $4.08 per square foot for residential development and increase commercial/industrial development fees from $0.61 to $0.66 per square foot (Rizzuti 2020).

Student Generation

School districts project the number of students that will be generated by new residential development by using district-specific rates to plan for future facilities expansion or construction. The generation rates used by TUSD are reflected in Table 5.14-12, *TUSD Student Generation Rates*.

Table 5.14-12 TUSD Student Generation Rates

	Student Generation Rate	
School Type	Single-Family Rate (Single-Family Attached/Single–Family Detached)	Multifamily Rate
Elementary School (K–5)	0.1584 / 0.1968	0.1402
Intermediate School (6–8)	0.0945 / 0.1319	0.0647
High School (9–12)	0.1154 / 0.1968	0.0878

Source: Rizzuti 2020

Charter and Private Schools

There are 13 charter schools in Santa Ana that provide education from kindergarten to grade 12 (GreatSchools.org 2020a). Moreover, Santa Ana is home to 92 private schools and preschools, offering residents a variety of school options for their children. The private schools vary in the grade levels served; inclusively, they provide education from preschool through grade 12 (GreatSchools.org 20120b). These schools are all privately funded and are not associated with any of the area school districts.

5.14.3.2 THRESHOLDS OF SIGNIFICANCE

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

SS-1 Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for school services.

5.14.3.3 REGULATORY REQUIREMENTS AND GENERAL PLAN POLICIES

Regulatory Requirements

RR SS-1 New residential and commercial development shall pay development fees authorized by Section 65996 of the California Government Code to be "full and complete school facilities mitigation."

General Plan Update Policies

The following goals and policies from the proposed elements would be applicable to school facilities in the city.

Community Element

Goal 2: Provide exceptional, accessible, and diverse educational programs and facilities to meet community needs.

- **Policy 2.1 Supporting Organizations.** Collaborate with both private and public organizations that support early childhood education programs to optimize and expand service capacity.
- **Policy 2.2 Educational Facilities Capacity.** Partner with local school districts, non-profit organizations, and other educational providers regarding land use and policy changes to ensure available educational facilities.
- **Policy 2.3 Partnerships with Schools.** Strengthen partnerships with local schools to promote safe, supportive, and effective learning environments that foster schools and community pride.
- **Policy 2.4 Parent Participation.** Support education, recreation programs, and after school activities that involve parent participation to increase high school graduation and college attendance rates.
- **Policy 2.5 Training Opportunities.** Promote and partner with local businesses, schools, and non-profits offering education, job training, internship, and apprenticeship opportunities for Santa Ana residents.
- **Policy 2.6 Educational Funding.** Enhance educational opportunities in the community by expanding and maintaining access to libraries, learning centers, and technology through innovative funding sources.

- **Policy 2.7 Lifelong Learning.** Encourage lifelong learning beyond the traditional classroom environment by promoting lectures, learning circles, self-directed discussion groups, and other educational opportunities at local libraries, historical societies, cultural centers, and public spaces.

Land Use Element

Goal 1: Provide a land use plan that improves quality of life and respects our existing community.

- **Policy 1.9 Public Facilities and Infrastructure.** Evaluate individual new development proposals to determine if the proposals are consistent with the General Plan, and to ensure that they do not compound existing public facility and service deficiencies.

Public Services Element

Goal 1: Provide quality and efficient facilities that are adequately funded, accessible, safe, and strategically located.

- **Policy 1.1 Maintenance and Design.** Provide and maintain public facilities that reinforce community identity through high quality design.
- **Policy 1.2 Equitable Distribution.** Ensure public services and facilities reflect changing population needs and are equitably distributed.
- **Policy 1.4 Civic Center Enhancements.** Explore opportunities to activate the Civic Center by incorporating social, cultural, entertainment venue programming, and improving infrastructure and connectivity to Downtown and surrounding neighborhoods.
- **Policy 1.5 Community Benefit.** Collaborate with community stakeholders to expand recreational, educational, cultural opportunities, promote active lifestyles, and maximize community benefit.
- **Policy 1.6 Facility Locations.** Support land use decisions related to community facilities that preserve quality of life for the City's residents and surrounding community.
- **Policy 1.10 Fair Share.** Require that new development pays its fair share of providing improvements to existing or creation of new public facilities and their associated costs and services.

Goal 2: Preserve a safe and secure environment for all people and property.

- **Policy 2.5 Safety Programs.** Promote early childhood education and prevention programs that improve public safety and maintain ongoing community education opportunities.
- **Policy 2.6 School Safety.** Collaborate with local schools to establish and implement comprehensive and coordinated services that enhance the security and safety of students, educators, and administrators on and off campus.

- **Policy 2.9 Quality Employees.** Enhance public safety efforts by actively seeking a diverse and talented pool of public safety candidates who possess the values and skills consistent with those of the community.

Goal 3: Supply, maintain, and expand City services and infrastructure improvements through innovative funding options and sustainable practices.

- **Policy 3.1 Service Partnerships**. Partner with service providers to ensure access to a wide range of state-of-the-art telecommunication systems and services for households, businesses, institutions, public spaces, and public agencies.

5.14.3.4 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance related to school services. The applicable thresholds are identified in brackets after the impact statement.

Population increases forecasted within the plan area for the 2045 scenario (full buildout) of the proposed General Plan Update are shown in Table 5.14-4.

Impact 5.14-3: The General Plan Update would generate additional students who would impact the school enrollment capacities of the Santa Ana Unified School District, Garden Grove Unified School District, and Orange Unified School District. [Threshold SS-1]

Development in accordance with the General Plan Update would create an additional 36,261 housing units, resulting in an increase in population. The increase in residents would also lead to an increase in the city's student population, which is primarily served by SAUSD. GGUSD, OUSD, and TUSD also serve students in Santa Ana.

School districts project the number of students that will be generated by new residential development by using district-specific rates to plan for future facilities expansion or construction (see Table 5.14-7, Table 5.14-9, Table 5.14-10, Table 5.14-11, and Table 5.14-12). Table 5.14-13, *General Plan Update Buildout Student Generation*, estimates the number of students generated in the city at General Plan Update buildout for each school district.

Table 5.14-13 General Plan Update Buildout Student Generation

School Type	New Students	Current Enrollment	Current Enrollment + New	Existing Capacity[1]	Remaining Capacity[1]
SAUSD					
Elementary School (K–5)	5,896	20,473	26,369	32,203	5,834
Intermediate School (6–8)	3,372	8,864	12,236	13,992	1,756
High School (9–12)	4,334	14,070	18,404	23,724	5,320
Total	**13,602**	**43,407**	**57,009**	**69,919**	**12,910**
GGUSD					
Elementary School (TK–6)	617	6,366	6,983	9,875	2,892
Intermediate School (7–8)	196	2,079	2,275	2,592	317
High School (9–12)	385	7,769	8,154	9,720	1,566
Total	**1,198**	**16,214**	**17,412**	**22,187**	**4,775**

Table 5.14-13 General Plan Update Buildout Student Generation

School Type	New Students	Current Enrollment	Current Enrollment + New	Existing Capacity[1]	Remaining Capacity[1]
OUSD					
Elementary School (K–5)	428	706	1,134	—	—
Intermediate School (6–8)	135	195	330	—	—
High School (9–12)	278	377	655	—	—
Total	**841**	**1,278**	**2,119**	—	—
TUSD					
Elementary School (K–5)	533	2,018	2,551	2,214	-337
Intermediate School (6–8)	274	1,399	1,673	1,469	-204
High School (9–12)	337	4,706	5,043	4,583	-460
Total	**1,144**	**8,266**	**9,267**	**8,266**	**-1,001**

Sources: Cogan and Gil 2020; Hills 2020; Rizzuti 2020
[1] Responses to service provider questionnaire were not received from OUSD, and therefore, information on capacity was not obtained.

As shown in Table 5.14-13, buildout of the General Plan Update would generate 7,474 elementary students, 3,977 intermediate school students, and 5,334 high school students in the City of Santa Ana. Additionally, as shown in Table 5.14-13, SAUSD, GGUSD, and TUSD would have a remaining capacity of 8,389 seats at elementary schools, 1,869 seats at intermediate schools, and 6,436 sets at high schools. The combination of remaining capacities at the three school districts would be adequate to accommodate the elementary and high school students generated by the General Plan Update. However, these remaining capacity figures do not include the remaining capacity at OUSD, which could increase the number of remaining seats.

If and when SAUSD, GGUSD, OUSD, and TUSD need to expand and construct new facilities to accommodate the growth generated by buildout of the General Plan Update, funding for new schools would be obtained from the fee program pursuant to SB 50, and state and federal funding programs. Pursuant to Section 65996 of the Government Code, payment of school fees is deemed to provide full and complete school facilities mitigation.

As shown in Table 5.14-13, SAUSD and GGUSD would have the capacity to accommodate future students generated as a result of the proposed General Plan Update. Under existing conditions, TUSD is at or near capacity (Rizzuti 2020). The addition of future students generated as a result of the General Plan Update would create a significant impact on TUSD's school facilities unless mitigation is provided; however, TUSD expects that all future development created by the General Plan Update would pay the maximum development fee in place at the time building permits are obtained (Rizzuti 2020).

At the General Plan level of analysis, it is speculative and infeasible to evaluate project-specific environmental impacts associated with the specific construction of future school facilities since specific sites and time frames for development are unknown. When specific projects are necessitated and subsequently undertaken to meet the growth demands from buildout of the General Plan Update, the appropriate level of analysis required under CEQA would be conducted by the school districts.

Furthermore, the goals and policies in the community element, land use element, and public services element of the General Plan Update would ensure adequate protection of school services.

Level of Significance Before Mitigation: With the implementation of RR SS-1 and the policies listed in Section 5.14.3.3, Impact 5.14-3 would be less than significant.

5.14.3.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, the following impact would be less than significant: Impact 5.14-3.

5.14.3.6 MITIGATION MEASURES

No mitigation measures are required.

5.14.3.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would remain less than significant.

5.14.4 Library Services

The information in this section is based partly on the written questionnaire responses by:

- Lupita Arroyo, City of Santa Ana Library Services Director, April 1, 2020

A copy of the responses is included in Appendix J-b of this PEIR.

5.14.4.1 ENVIRONMENTAL SETTING

Regulatory Background

Local

Local laws, regulations, plans, or guidelines that are applicable to the General Plan Update are summarized herein.

Santa Ana Municipal Code

- **Section 35-114 (Residential Development Tax).** This section of the municipal code imposes an excise tax on the privilege of engaging in residential development in the city. Any tax revenues collected pursuant to this section are placed in the City's general fund. General fund revenues are used to provide for the needs of public city libraries.

Existing Conditions

Residents of the city are served by two libraries and four community centers.

Libraries

The Main Library at 26 Civic Center Plaza is 39,790 square feet and has amenities such as computer labs with internet access, a learning center, and the Santa Ana History Room. The History Room collects, preserves, and makes available materials of enduring historical value relating to the development of the City of Santa Ana and Orange County.

The Newhope Library Learning Center, which is 10,600 square feet, is at 122 North Newhope Street and includes computer labs with internet access, a learning center, and a TeenSpace. TeenSpace is a mentoring program aimed at keeping underserved Santa Ana youth off the streets, in school, and focused on college and career plans (Santa Ana 2019d).

The libraries offer special resources to teachers, principals, and librarians of the SAUSD and all other schools in the city. These resources include partnerships, special material requests, teacher loan privileges, classroom story hour, and assignment alerts. The libraries offer access to books, periodicals, e-content, online databases, a Higher Education Center, and programming for all ages (Arroyo 2020).

Community Centers

Garfield Community Center is located at 501 North Lacy Street. The community center has computer labs and teen activity rooms. The Roosevelt-Walker Community Center, at 816 E. Chestnut Avenue, also has computer labs and teen activity rooms in addition to an e-library. Jerome Community Center, at 726 South Center Street, offers the TeenSpace program, and the Delhi Center, at 505 East Central Avenue, offers the Children's Library Literacy program (Santa Ana 2019d).

5.14.4.2 THRESHOLDS OF SIGNIFICANCE

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

LS-1 Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for library services.

5.14.4.3 REGULATORY REQUIREMENTS AND GENERAL PLAN POLICIES

Regulatory Requirements

RR LS-1 New residential development shall pay a property excise tax per the City Municipal Code Section 35-114, Residential Development Tax.

General Plan Update Policies

The following goals and policies from the proposed elements would be applicable to school facilities in the city.

Land Use Element

Goal 1: Provide a land use plan that improves quality of life and respects our existing community.

- **Policy 1.9 Public Facilities and Infrastructure.** Evaluate individual new development proposals to determine if the proposals are consistent with the General Plan, and to ensure that they do not compound existing public facility and service deficiencies.

Public Services Element

Goal 1: Provide quality and efficient facilities that are adequately funded, accessible, safe, and strategically located.

- **Policy 1.1 Maintenance and Design.** Provide and maintain public facilities that reinforce community identity through high quality design.
- **Policy 1.2 Equitable Distribution.** Ensure public services and facilities reflect changing population needs and are equitably distributed.
- **Policy 1.4 Civic Center Enhancements.** Explore opportunities to activate the Civic Center by incorporating social, cultural, entertainment venue programming, and improving infrastructure and connectivity to Downtown and surrounding neighborhoods.
- **Policy 1.5 Community Benefit.** Collaborate with community stakeholders to expand recreational, educational, cultural opportunities, promote active lifestyles, and maximize community benefit.
- **Policy 1.6 Facility Locations.** Support land use decisions related to community facilities that preserve quality of life for the City's residents and surrounding community.
- **Policy 1.10 Fair Share.** Require that new development pays its fair share of providing improvements to existing or creation of new public facilities and their associated costs and services.

Goal 2: Preserve a safe and secure environment for all people and property.

- **Policy 2.9 Quality Employees.** Enhance public safety efforts by actively seeking a diverse and talented pool of public safety candidates who possess the values and skills consistent with those of the community.

Goal 3: Supply, maintain, and expand City services and infrastructure improvements through innovative funding options and sustainable practices.

- **Policy 3.1 Service Partnerships**. Partner with service providers to ensure access to a wide range of state-of-the-art telecommunication systems and services for households, businesses, institutions, public spaces, and public agencies.

5.14.4.4 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance related to library services. The applicable thresholds are identified in brackets after the impact statement.

Population increases forecasted within the plan area for the 2045 scenario (full buildout) of the proposed General Plan Update are shown in Table 5.14-3.

Impact 5.14-4: The General Plan Update would allow for up to 22,361 additional residents in the General Plan Update plan area, increasing the service needs for the Main Library and the Newhope Library Learning Center. [Threshold LS-1]

The full buildout scenario of the General Plan Update estimates additional development of up to 36,261 housing units and 5,849,220 building square footage, resulting in a total of 360,077 residents and 170,416 jobs by General Plan Update buildout. With a substantial increase in residents in the area, there would be an increase in demand for library services.

The American Library Association does not have standards for facility size and circulation, but rather, supports local benchmarks. The California Library Association fiscal year 2015 surveys indicate that the median library was 0.45 square feet/capita in size. The existing library space and number of books are considered inadequate to meet the needs of the existing population (Arroyo 2020). There is a deficit of 99,409 square feet in building area and a deficit of 243,483 in collection size; additional resources would also be needed, such as computers, staffing, and programs (Arroyo 2020).

To determine demand factors or standards for the amount of library space and number of volumes, or collection size needed, a master plan or facility standards assessment would be best to assess the needs of the population; as the libraries in Santa Ana have neither, the circulation data and foot traffic at the existing libraries in the city were used to determine the needs (Arroyo 2020). Santa Ana has 0.1633 total library square footage per capita. To meet the demands of the General Plan Update, an additional 15,190 square feet of library facilities, 81,353 collection items, 16.25 fulltime staff, and additional computers and programming would be needed (Arroyo 2020). Although there are currently no plans for future library facilities, the City is in the process of procuring a mobile library unit or bookmobile to better serve the population (Arroyo 2020).

Funding would be required to provide the additional resources needed to meet the demand factors for the city. Generally, impact fees are assessed on new development to help pay for public infrastructure required to accommodate the new development. Funding for library services comes primarily from the property tax revenue, as well as library fines and fees collected from patrons, and state, federal, or government aid. As development occurs, property tax revenue should grow proportionally with the property tax collections. Additionally, access to online resources, including eBooks and audiobooks, are available on the libraries' system.

At the General Plan level of analysis, it is speculative and infeasible to evaluate project-specific environmental impacts associated with the specific construction of future library facilities since specific sites and time frames for development are unknown. When specific projects are necessitated and subsequently undertaken to meet the growth demands from buildout of the General Plan Update, the appropriate level of analysis required

under CEQA would be conducted by the city's library services. Therefore, the General Plan Update would not have a substantial impact associated with the provision of new or physically altered governmental facilities and impacts would be less than significant.

Furthermore, the goals and policies in the land use element and public services element of the General Plan Update would ensure adequate protection of library services.

Level of Significance Before Mitigation: With the implementation of RR LS-1 and the policies listed in Section 5.14.4.3, Impact 5.14-4 would be less than significant.

5.14.4.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, the following impact would be less than significant: Impact 5.14-4.

5.14.4.6 MITIGATION MEASURES

No mitigation measures are required.

5.14.4.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would remain less than significant.

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5. Environmental Analysis
PUBLIC SERVICES

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5.15 RECREATION

This section of the Draft Program Environmental Impact Report (Draft PEIR) evaluates the potential impacts on recreation in the City of Santa Ana associated with implementation of the General Plan update. The potential for adverse impacts on accessibility of recreational facilities to existing and proposed residential neighborhoods, and impacts resulting from the construction of additional recreational facilities are evaluated based on existing facilities and their usage.

5.15.1 Environmental Setting

5.15.1.1 REGULATORY BACKGROUND

State

California Public Park Preservation Act

The primary instrument for protecting and preserving parkland is California's Public Park Preservation Act of 1971. Under California Public Resources Code Sections 5400 et seq., cities and counties may not acquire any real property that is in use as a public park for any nonpark use unless compensation, land, or both are provided to replace the parkland acquired. This ensures no net loss of parkland and facilities.

Quimby Act

The 1975 Quimby Act (California Government Code Section 66477) authorizes cities and counties to pass ordinances requiring that developers set aside land, donate conservation easements, or pay fees for park improvements. Revenues generated through the Quimby Act cannot be used for the operation and maintenance of park facilities. A 1982 amendment (AB 1600) requires agencies to clearly show a reasonable relationship between the public's need for the recreation facility or parkland, and the type of development project upon which the fee is imposed. Cities and counties with a high ratio of park space to inhabitants can set a standard of up to five acres per 1,000 people for new development. Cities and counties with a lower ratio can require the provision of up to three acres of park space per 1,000 people. The calculation of a city or county's park space to population ratio is based on a comparison of the population count of the last federal census to the amount of city/county-owned parkland.

Local

City of Santa Ana Municipal Code

The City of Santa Ana Municipal Code identifies land use categories, development standards, and other general provisions that ensure consistency between the City's General Plan and proposed development projects. The following provisions from the municipal code focus on park service impacts associated with new development projects and subdivisions and are relevant to the General Plan update.

Chapter 34, Article VIII (Regulations for Dedication of Land for Park or Recreational Purposes): As a condition of approval of a final subdivision map for any subdivision with more than 50 parcels proposed for residential use, the subdivider may be required to dedicate land for park and recreational purposes at the time

of final map approval. The dedication of land should promote the general standard of providing two acres of property devoted to parks and recreational purposes for each thousand persons residing in Santa Ana. The standards for determining land to be dedicated are shown in Table 5.15-1.

Table 5.15-1 Standards for Dedication of Land

Dwelling Unit Type	Assumed Density Per Acre	Assumed Persons Per Unit	Land to Be Dedicated Per Dwelling Unit	
			Acre	Square Feet
Single-family	3 to 7.3	4.0	0.008	348.5
Duplexes	8.14	3.0	0.006	261.4
Multifamily	Variable	2.4	0.005	209.1

Source: Santa Ana 2019 (SAMC Section 34-204)

Chapter 35, Article IV (Residential Development Fee): Requires that any person adding net residential units or converting apartments to condominiums pay fees, dedicate land in lieu thereof, or a combination of both for the purpose of preserving an appropriate balance between the demand by residents for park and recreational facilities and the availability of such park and recreational facilities. This article also precludes residential development that would impose an excess demand on such facilities.

Development of parks in the city will require the construction of park and recreation facilities sufficient to provide two acres of such facilities per 1,000 population in the city. Fees paid shall be placed in a special fund to be known as the "Park Acquisition and Development Fund." Moneys in this fund shall be expended for the acquisition, construction, and renovation of park and recreation facilities. In the event the city meets the standard of two acres of such facilities per 1,000 population, and will meet such criterion following all developments for which fees have been collected, any moneys remaining in the fund may be used for renovation of the city's existing parks.

5.15.1.2 EXISTING CONDITIONS

The Santa Ana Parks, Recreation, and Community Services Agency is responsible for delivering a variety of services to the community that includes recreation programs, parks, libraries, and operations of the Santa Ana Zoo. Currently, approximately 353 acres are developed as park space. The parks in the city range from 0.2 acre to 69.5 acres, and each provides varied amenities and facilities, such as playgrounds, shelters, picnic tables, sports fields, drinking fountains, restrooms, and parking (Santa Ana 2020).

Santa Ana's public park and recreation facilities are distributed generally uniformly throughout the city. However, the city does not meet the municipal code requirement of two acres of parkland per 1,000 residents (Ono 2020). Little current or future potential exists for the acquisition of additional park lands and open spaces, both because the city is almost fully developed and because demands on capital funds are highly competitive (Santa Ana 2010). However, in addition to parks and open space areas, the city also has recreational facilities and programs, trails, joint-use parks, and nearby regional recreation areas, as detailed below, which contribute to providing residents with recreational facilities in the City.

Parks and Open Space Areas

Existing Parks

The City owns and/or operates 44 parks; the City proposes to construct two additional parks. The City's current inventory of parks and recreational facilities is listed in Table 5.15-2 and shown on Figure 5.15-1, *Parks and Trails*.

Table 5.15-2 Park Facilities Inventory

Park	Location	Acreage	Amenities
Small Parks			
Angels Community Park	914 West 3rd Street	1.72	Ball Diamonds, Basketball Courts, Concession Stand, Multipurpose Field, Multipurpose Court, Playground (Tots/Youth), Street Parking, Picnic Tables,
Maple & Occidental Park	Corner of Maple and Occidental Street	0.43	Drinking Fountain, Exercise Equipment
Birch Park	210 North Birch Street	2.66	Santa Ana Senior Center, Concession Stand, Parking Structure, Picnic Shelters, Outdoor Exercise equipment, Restroom
Memory Lane Park	1560 West Memory Lane	0.47	Hiking/Exercise Trail, Drinking Fountain, Playground, Picnic Shelter, Bike Trail, Exercise Equipment
Eldridge Park	2933 North Fallbrook Drive	1.20	Street Parking
Edna Park	2140 West Edna Drive	2.82	Hiking/Exercise Trail, Ball Diamond, Drinking Fountain, Multi-Purpose Field, Parking Stalls, Playground, Picnic Tables, Restroom
Pacific Electric Park	Corner of McFadden Avenue and Maple Street	1.39	Drinking Fountain, Street Parking, Playground, Picnic Shelter, Restroom, Exercise Equipment, Community Garden
Chepa's Park	1009 North Custer Street	0.41	Basketball Court, Drinking Fountain, Playground, Benches, Restroom, Handball courts, Street Parking
Plaza Calle Cuarto Park	325 East Fourth Street	0.20	Restroom
Fairview Triangle Park	1100 South Fairview Street	0.30	Bike Trail, Passive Area
Fisher Cabin Park	2501 North Flower Street	2.34	Hiking/Exercise Trail, Drinking Fountain, Street Parking, Playground, Restroom, Log Cabin
Saddleback View Park	631 North Patricia Lane	0.92	Drinking Fountain, Street Parking, Playground, Picnic Table, Picnic Shelters
French Park	901 North French Street	0.17	Benches, Street Parking
Garfield Exercise Park	902 North Brown Street	0.10	Exercise Equipment, Street Parking
Sara May Downie Herb Garden	2405 North Flower Street	0.13	Benches, Drinking Fountain
Segerstrom Triangle Park	1000 West Hemlock Way	1.22	
Sasscer Park	502 West Santa Ana Boulevard	0.92	
17th Street Triangle Park	2125 West 17th Street	0.66	Bike Trail
McFadden Triangle Park	630 South Susan Street	0.80	Bike Trail, Passive Areas
Neighborhood Parks			
Bomo Koral Park	900 West MacArthur Boulevard	10.40	Ball Diamonds, Drinking Fountain, Multipurpose Field, Parking Stalls, Picnic Tables
Memorial Park	2102 South Flower Street	17.00	Ball Diamond, Basketball Courts, Drinking Fountain, Handball Courts, Multipurpose Field, Parking Stalls,

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Table 5.15-2 Park Facilities Inventory

Park	Location	Acreage	Amenities
			Playground, Picnic Tables, Restroom, Swimming Pool (Memorial Center), Exercise Equipment
Thornton Park	1801 West Segerstrom Avenue	32.83	Barrier Free Playground, Ball Diamonds, Bike Trail, Multipurpose Field, Parking Stalls, Hiking/Exercise Trail, Drinking Fountain, Playground, Lake
Windsor Park	2915 West La Verne Avenue	10.48	Barrier Free Playground, Ball Diamonds, Multipurpose Field, Basketball Courts, Parking Stalls, Drinking Fountain, Playground, Tennis Courts, Picnic Tables, Picnic Shelter
Adams Park	2302 South Raitt Street	5.68	Ball Diamonds, Basketball Courts, Concession Stand, Multipurpose Field, Multipurpose Court, Playground (Tots/Youth), Parking Spaces/ Handicapped Parking, Picnic Tables, Picnic Shelters, Restroom, Sports Field Lighting
Madison Park	1528 South Standard Avenue	6.06	Ball Diamonds, Basketball Courts, Concession Stand, Multipurpose Field, Multipurpose Court, Playground (Tots/Youth), Parking Spaces/ Handicapped Parking, Picnic Tables, Restroom
Cabrillo Park	1820 East Fruit Street	7.60	Ball Diamonds, Drinking Fountain, Multipurpose Field, Parking Stalls, Picnic Tables, Restroom
Morrison Park	2801 North Westwood Avenue	5.07	Ball Diamond, Basketball Courts, Drinking Fountain, Handball Courts, Multipurpose Field, Parking Stalls, Playground, Picnic Tables, Tennis Courts
Cesar Chavez Campesino Park	3311 West 5th Street	6.30	Ball Diamond, Basketball Courts, Drinking Fountain, Multipurpose Field, Parking Stalls, Playground, Picnic Tables, Restroom, Handball Courts
Delhi Park	2314 South Halladay Street	10.40	Ball Diamond, Basketball Courts, Drinking Fountain, Multipurpose Field, Parking Stalls, Playground, Restroom, Handball Courts
Portola Park	1700 East Santa Clara Avenue	9.07	Ball Diamond, Basketball Courts, Drinking Fountain, Multipurpose Field, Parking Stalls, Playground, Picnic Tables, Tennis Courts
Prentice Park	1801 East Chestnut Avenue	18.75	Playground, Picnic Tables
El Salvador Center Park	1825 West Civic Center Drive	8.40	Ball Diamond, Basketball Courts, Concession Stand, Drinking Fountain, Multipurpose Field, Parking Stalls, Playground, Picnic Tables, Restroom, Handball Courts, Swimming Pool (El Salvador Center), Community Garden
Riverview Park	1817 West 21st Street	8.76	Ball Diamond, Basketball Courts, Drinking Fountain, Hiking/Exercise Trail, Multipurpose Field, Parking Stalls, Playground
Rosita Park	706 North Newhope Street	8.68	Ball Diamond, Indoor Basketball Courts, Drinking Fountain, Gymnasium, Multipurpose Field, Swimming Pool (Salgado Center), Parking stalls, Playground
Sandpointe Park	3700 South Birch Street	6.63	Basketball Courts, Hiking/Exercise Trail, Multipurpose Field, Drinking Fountain, Street Parking, Playground, Picnic Table, Tennis Courts, Volleyball
Friendship Park	2210 West Myrtle Street	0.09	Playground, Street Parking

Table 5.15-2 Park Facilities Inventory

Park	Location	Acreage	Amenities
Santa Anita Park	300 South Figueroa Street	4.86	Ball Diamond, Basketball Courts, Multipurpose Field, Drinking Fountain, Playground, Parking Stalls, Restroom, Handball Courts
Santiago Park	2535 North Main Street	34.43	Ball Diamond, Archery Range, Lawn Bowling Green, Log Cabin, Wildlife and Watershed Interpretive Center, Multipurpose Field, Drinking Fountain, Playground, Parking, Restroom, Tennis Courts, Bike Trail
Griset Park	2400 MacArthur Boulevard	6.79	Multipurpose Field
Heritage Park	4812 West Camille Street	6.51	Ball Diamond, Drinking Fountain, Multipurpose Field, Parking Stalls, Playground, Picnic Tables, Restroom
Jerome Park	726 South Center Street	17.92	Ball Diamond, Basketball Courts, Drinking Fountain, Gymnasium, Handball Courts, Multipurpose Field, Parking Stalls, Playground, Picnic Tables, Restroom, Swimming Pool (Jerome Center), Community Garden
Mabury Park	1801 East Fruit Street	5.46	Drinking Fountain, Street Parking, Playground, Picnic Tables, Picnic Shelters
Lillie King Park	500 West Alton	9.60	Drinking Fountain, Multipurpose Field, Parking Stalls, Playground, Picnic Tables
6th and Lacy Park (Mariposa Park)	720 East 6th Street	0.42	Skate Elements, Drinking Fountain, Playground
Regional Parks			
Centennial Park	3000 West Edinger Avenue	69.5	Ball Diamond, Basketball Courts, Drinking Fountain, Multipurpose Field, Parking Stalls, Playground, Picnic Tables, Restroom, Sports Field Lighting, Picnic Shelters
Linear Parks			
Linear Parks	Citywide	5.97	-
TOTAL EXISTING PARKLAND ACREAGE		**352.52**	
Future Parks			
Raitt/Myrtle Park	-	1.09	-
Standard/McFadden Park	-	0.75	-
TOTAL EXISTING AND PLANNED PARKLAND ACREAGE		**354.36**	

Source: Santa Ana 2020; Ono 2020; CSLS 2020.

Centennial Park, the largest of all the city's parks, is in a relatively central position in the city and an important node of open space in the regional system. Grant funding was recently approved to develop two new parks—Raitt/Myrtle Park and Standard/McFadden Park (Ono 2020).

Parks and Open Space by Focus Area

Grand Avenue/17th Street

This focus area includes schools and higher education institutions, such as the Springs Charter School, which includes playfields at its site. There are parcels designated as open space in this focus area, however, there are no parks in this focus area. Parks near this focus area include Portola Park, Mabury Park, and Cabrillo Park.

South Main Street

There are no parks in this focus area, but parks that are within close proximity include Memorial Park, Madison Park, and Delhi Park. All parcels in this focus area consist of developed land.

55 Freeway/Dyer Road

There are several parcels in this focus area designated as open space, however, they are developed (e.g. railroad, concrete channel). There is one open space parcel that is currently vacant and contains ruderal vegetation. There are no parks in this focus area; Delhi Park is adjacent to it.

South Bristol Street

All the parcels in this focus area are developed. There are no parks in this focus area; however, nearby parks include Sandpointe Park, Bomo Koral Park, Lillie King Park, Carl Thornton Park, and Griset Park.

West Santa Ana Boulevard

This focus area includes the Willowick Golf Course, Cesar Chavez Campesino Park, Angels Community Park, and Spurgeon Park (joint-use school park), which totals approximately 124.4 acres of parkland.

Existing Open Space Areas

In addition to the parks listed in Table 5.15-2, the city has open space areas that serve as additional recreational space for residents. The Santa Ana River and Santiago Creek are part of a regional system of open space corridors promoted by Orange County. In the city, the Santa Ana River extends between State Route 22 (SR-22) to MacArthur Boulevard. This corridor represents 116 acres of open space in the city.

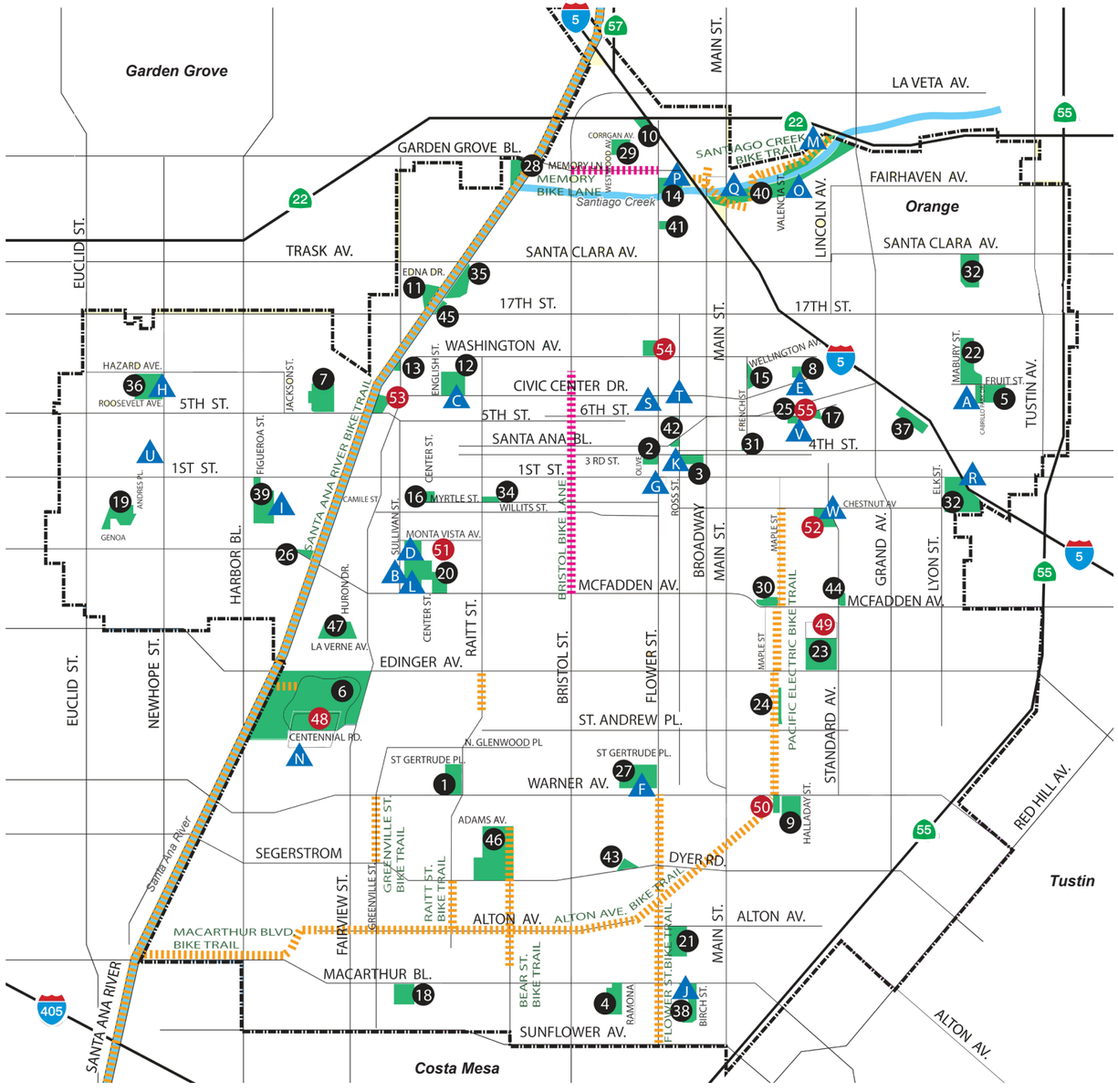
Recreational Facilities

Santa Ana's Parks, Recreation, and Community Services Agency also provides recreational programs, including:

- Youth sports programs for children in pre-kindergarten through eighth grades
- Chess clubs and tournaments
- Aquatics programming during the summer months for all ages
- Family PRIDE clubs that allow families to participate in interactive family recreation
- A kayaking program that trains and prepares teens to participate in local, county, state, and national tournaments throughout the year
- A community garden program that offers youth and their families the training and motivation to adopt healthy food habits

The City has about 13.89 acres of sports facilities.

Figure 5.15-1 - Parks and Trails



City of Santa Ana

CITY PARKS

1. Adams
2. Angels Comm.
3. Birch
4. Bomo Koral
5. Cabrillo
6. Centennial
7. Cesar Chavez Campesino
8. Chepa's
9. Delhi
10. Eldridge
11. Edna
12. El Salvador
13. Fairview Triangle
14. Fisher
15. French
16. Friendship
17. Garfield Exercise
18. Griset
19. Heritage
20. Jerome
21. Lillie King
22. Mabury
23. Madison
24. Maple & Occidental
25. Mariposa
26. McFadden Triangle
27. Memorial
28. Memory Lane
29. Morrison
30. Pacific Electric
31. Plaza Calle Cuatro
32. Portola
33. Prentice Park
34. Raitt/Myrtle*
35. Riverview
36. Rosita
37. Saddleback View
38. Sandpointe
39. Santa Anita
40. Santiago
41. Sarah May Downie Herb Garden
42. Sasscer
43. Segerstrom Triangle
44. Standard/McFadden *
45. 17th Street Triangle
46. Thornton
47. Windsor

JOINT USE SITES

48. Godinez H.S.
49. Madison E.S.
50. Monroe E. S
51. Monte Vista E.S.
52. Roosevelt E.S.
53. Spurgeon I. S.
54. Willard I.S.
55. Garfield E.S.

RECREATION FACILITIES

- A. Cabrillo Tennis Center
- B. Corbin Center
- C. El Salvador Community Center*
- D. Jerome Rec. Center*
- E. Logan Rec. Center
- F. Memorial Rec. Center*
- G. Neal Machander Tennis Center
- H. Salgado Rec. Center*
- I. Santa Anita Rec Center*
- J. Sandpointe Rec. Center
- K. Santa Ana Senior Center
- L. Southwest Senior Center
- M. Wildlife and Watershed Interpretive Center
- N. Godinez Gym & Performing Arts Center
- O. Santiago Lawn Bowling Center
- P. Fisher Cabin
- Q. Santiago Cabin
- R. Santa Ana Zoo @ Prentice Park
- S. Santa Ana Stadium
- T. Central Public Library
- U. Newhope Library
- V. Garfield Center
- W. Roosevelt/Walker Community Center

* Centers with Pool

Bike Trail - Class I

Bike Lane - Class II

⋆ Future Parks

0 1
Scale (Miles)

Source: City of Santa Ana Parks, Recreation, and Community Services Agency, 2020 (Santa Ana, 2020)

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Trails

There are nine existing Class I bike trails in Santa Ana. The following Class I trails are in the plan area and shown on Figure 5.15-1, *Parks and Trails*: Refer to Section 5.16.1.2, *Existing Conditions,* of Chapter 5.16, *Transportation,* which provides definitions of the bikeway classifications.

- **Santa Ana River Bike Trail** extends northeast-southwest along the Santa Ana River.
- **Santiago Creek Bike Trail** extends east-west along Santiago Creek.
- **Pacific Electric Bike Trail** extends north-south along Maple Street.
- **Alton Avenue Bike Trail** begins in Delhi Park and extends northeast-southwest to Alton Avenue. The trail then extends east-west along Alton Avenue.
- **Raitt Street Bike Trail** extends north-south in two separate sections along Raitt Street.
- **Greenville Street Bike Trail** extends north-south along Greenville Street.
- **Bear Street Bike Trail** extends north-south along Bear Street. The trail begins in Thorton Park.
- **Flower Street Bike Trail** extends north-south along Flower Street.
- **MacArthur Boulevard Bike Trail** extends east-west along MacArthur Boulevard.

Class II bike lanes exist on Bristol Street between McFadden Avenue and Civic Center Drive, and on Memory Lane between Flower Street and Bristol Street.

The city also has hiking trails in Sandpointe Park, Fisher Cabin Park, Riverview Park, Edna Park, Memory Lane Park, and Thornton Park.

There is a total of 36.89 acres of hiking trails and bike trails in the city (CSLS 2020).

Joint-Use School Parks

The City has a long-standing agreement with Santa Ana Unified School District (SAUSD) for joint use of district school recreational facilities by the public. The City currently has joint agreements with eight schools. The school facilities include athletic fields, performing arts centers, gymnasiums, auditoriums, swimming pools, and parking. Though these facilities are mainly for educational purposes during school hours, they are open to the public for recreational use after hours, during the summer, and on the weekends. Locations of these joint-use school parks are shown on Figure 5.15-1, *Parks and Trails.* Although not owned or maintained by the City, the recreational areas of the SAUSD schools are also applied to meeting the City's park standard. Therefore, it is assumed that the 42.64 acres of SAUSD school playfields is credited toward meeting the City's parkland standard.

Nearby Regional Recreation Areas

The following regional recreation areas are near the plan area and accessible to its residents and visitors:

- **Mile Square Regional Park:** Located on a 640-acre block bounded by Edinger Avenue, Euclid Avenue, Warner Avenue, and Brookhurst Street in Fountain Valley, near the southwest boundary of Santa Ana. Facilities at the park include two lakes, game fields, picnic areas, recreational and cultural center, a clubhouse, golf course, archery range, and radio-controlled airplane field.
- **Irvine Regional Park:** Located to the northeast of Santa Ana at 1 Irvine Park Road in the City of Orange, facilities at this park include tables and barbeques, parking, restrooms, paved bicycle/walking trail, six playgrounds, four softball fields, two horseshoe pits, a lake, and an equestrian trail.
- **Willowick Golf Course:** Located on the west side of the Santa Ana River is a 100-acre golf course owned and operated by the City of Garden Grove. The golf course has the highest usage of all courses in the county.
- **Fairview Regional Park:** Located at 2500 Placentia Avenue in Costa Mesa, southwest of Santa Ana. This park covers 210 acres and is developed with a mini railroad, vernal pools, cove chaparral, and open fields for games, gliders, etc.
- In addition, **Newport Beach** and **Newport Harbor** are less than 20 minutes from Santa Ana.

City of Santa Ana Parkland Standard

The Santa Ana Municipal Code establishes a standard of 2 acres of park and recreation facilities per 1,000 residents. Combining the City's 352.52 acres of parkland and 116 acres of open space area in the Santa Ana River corridor, the City has a total of approximately 468.52 acres of developed parkland and open space that go toward meeting the parkland standard. The City also has 42.64 acres of SAUSD joint-use school park facilities, 36.89 acres of hiking trails and bike trails, and 13.89 acres of sports facilities, for a total of 561.94 acres of parkland. Note that this does not include paseos, greenways, the two future parks, or private parks owned and maintained by homeowner associations.

Based on the 2019 estimated population of 334,774 for Santa Ana (see Table 3-5, *General Plan Update Existing and Buildout Population*), the plan area has approximately 1.68 acres of parkland for every 1,000 residents in the city. This is 0.32 acre short of meeting the General Plan standard. Table 5.15-3, *Existing vs. Required Parkland Acreage,* quantifies the existing and additional acreage needed to meet the standard.

Table 5.15-3 Existing vs. Required Parkland Acreage

	Santa Ana Plan Area 2019 Population	Parkland Standard (Acres/1,000)	Required Acreage	Existing Acreage	Existing Deficiency
Developed Parkland	334,774	2	669.5 acres	561.94 acres	107.56 acres

Source: PlaceWorks 2020.

Funding

The City's General Fund is used to maintain park sites in the city. Improvement funding predominantly comes from federal/state grants, Community Development Block Grants (CDBG), or Park Residential Development Fees (Acquisition and Development fees) (Ono 2020).

5.15.2 Thresholds of Significance

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

R-1 Would increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

R-2 Includes recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

5.15.3 Regulatory Requirements and General Plan Policies

5.15.3.1 REGULATORY REQUIREMENTS

RR REC-1 Residential development associated with the General Plan update will be required to comply with the provisions of the Municipal Code Chapter 35, Article IV (Residential Development Fee). Residential development is mandated to pay fees, dedicate land in lieu thereof, or a combination of both for the purpose of preserving recreational facilities in the City.

RR REC-2 As a condition of approval of a final subdivision map for any subdivision containing more than fifty (50) parcels proposed for residential use, subdividers may be required to dedicate land for recreational purposes in accordance with Chapter 34, Article VIII (Regulations for Dedication of Land for Park or Recreational Purposes) of the City's Municipal Code. Dedication of land shall promote the general standard of providing two acres of property devoted to parks and recreational purposes for each thousand persons residing within the City of Santa Ana.

5.15.3.2 GPU POLICIES

The following goals and policies from the proposed elements would be applicable to recreational facilities in the City.

Community Element

Goal 1: Provide opportunities for public and private recreation and cultural programs that meet the needs of Santa Ana's diverse population.

- **Policy 1.1 Access to Programs.** Provide and maintain access to recreational and cultural programs within walking distance of residential areas.

- **Policy 1.2 Community Input.** Engage residents and community facility users to provide input for facility improvements and programming.
- **Policy 1.3 Equitable Programs.** Encourage cultural programs and activities of local interest that are inclusive and affordable to all.
- **Policy 1.4 Shared Use.** Expand community activities and programs at City facilities and throughout the community through shared use or cooperative agreements.
- **Policy 1.5 Equitable Recreational Spaces.** Promote the development and use of municipal buildings, indoor facilities, sports fields, and outdoor spaces for recreation that serve residents throughout the City.
- **Policy 1.6 Recreation on Private Property.** Promote the development and use of privately-owned recreation and entertainment facilities that are affordable and meet the needs of Santa Ana residents.
- **Policy 1.7 Connections to Facilities.** Support efforts to connect residents and visitors to local and regional cultural, educational, and natural environments.
- **Policy 1.8 Developer Involvement.** Promote developer participation in the provision of community facilities to meet the recreational needs of residents.
- **Policy 1.10 Community Attractions.** Incorporate placemaking elements and technology into existing and new parks and facilities to encourage use of public spaces, access to educational resources and community led activities.
- **Policy 1.11 Program Incentives.** Incentivize use of privately owned property to promote recreation, health, wellness, and culture programs.

Land Use Element

Goal 1: Provide a land use plan that improves quality of life and respects our existing community.

- **Policy 1.3 Equitable Distribution of Open Space.** Promote the creation of new open space and community serving amenities in park deficient areas.
- **Policy 1.9 Public Facilities and Infrastructure.** Evaluate individual new development proposals to determine if the proposals are consistent with the General Plan, and to ensure that they do not compound existing public facility and service deficiencies.

Goal 2: Provide a balance of land uses that meet Santa Ana's diverse needs.

- **Policy 2.9 Open Space Needs.** Provide sufficient open space and recreational opportunities for Santa Ana Residents and visitors.

Goal 4: Support a sustainable Santa Ana through improvements to the built environment and a culture of collaboration.

- **Policy 4.9 Recreational Amenities.** Encourage public and commercial recreational facilities in areas that are park and open space deficient.

Open Space Element

Goal 1: Provide a safe, accessible, sustainable, and diverse park and facility system with recreational opportunities accessible to all residents.

- **Policy 1.1 Park Master Plan.** Create and maintain a Santa Ana parks master plan that incorporates data on need, demographics, and health outcomes.

- **Policy 1.2 Parks and Recreation Network.** Establish a comprehensive and integrated network of parks, open space, and recreational facilities that maintains and provides a variety of active and passive recreational opportunities that meets the needs of all Santa Ana residents, regardless of age, ability, or income.

- **Policy 1.3 Park Standard.** Achieve a minimum park standard of two acres per 1,000 residents in the City.

- **Policy 1.4 Park Connectivity.** Establish and enhance options for residents to access existing and new park facilities through safe walking, bicycling, and transit routes.

- **Policy 1.5 Development Amenities.** Ensure all new development provides open space and effectively integrates pedestrian and multi-modal travelways to promote a quality living environment.

- **Policy 1.7 Community Building.** Ensure that park facilities and programs reflect the priorities of residents in the surrounding neighborhoods, with attention to place-making elements that foster social interaction and community pride such as art, landscape, monuments, murals, play equipment, and seating.

- **Policy 1.8 Creative Solutions.** Develop creative and flexible solutions to create infill parks in neighborhoods where traditional pocket, neighborhood, and community parks are not feasible.

- **Policy 1.9 Funding Sources.** Explore and pursue all available funding for the acquisition of parkland, the development of park facilities, programming, and maintenance of existing and new parks, including nontraditional finding sources.

- **Policy 1.10 Shared Use.** Collaborate with school districts, faith-based communities, and community serving organizations to expand shared use facilities through cooperative agreements, as well as pursuing multiple use strategies of publicly owned land.

- **Policy 1.11 Accessibility.** Design new and renovated existing parks, recreation facilities, and trails to provide access to residents of all physical abilities.

- **Policy 1.12 Neighborhood Needs.** Consider unique neighborhood needs in the development of open spaces and programs.

Goal 2: Provide a system of parks, open spaces, and community centers that are well-maintained, safe, and health environments for all users.

- **Policy 2.2 Neighborhood Engagement.** Encourage residents, neighborhood groups, businesses, schools, organizations, and public agencies to partner in the creation and maintenance of safe and well maintained publicly-owned park and recreation facilities.

- **Policy 2.4 Urban Forest.** Maintain, preserve, and enhance the City's urban forest as an environmental, economic, and aesthetic resource to improve residents' quality of life.

- **Policy 2.6 Facility Maintenance.** Ensure all park facilities and open spaces are well maintained.

Goal 3: Preserve, expand, and create additional open space areas and linkages throughout the City to protect the natural and visual character of the community, and to connect to local and regional activity centers.

- **Policy 3.1 Recreational Corridors.** Establish and maintain an integrated recreational and multi-modal commuter corridor network linking open spaces, housing, community services, and employment centers.

- **Policy 3.2 Linking Development.** Promote bicycle and pedestrian linkages and amenities throughout new and existing development to promote use of alternative modes of transportation and active lifestyles.

- **Policy 3.3 Publicly Owned Land.** Maintain and explore options for publicly owned land for the creation of open space pathways and corridors.

- **Policy 3.4 Greenway Corridors.** Coordinate with government and private sector to explore opportunities to incorporate pedestrian, multi-modal, and landscape amenities along the OC Streetcar route, flood control channels, and other underutilized sites.

- **Policy 3.6 Naturalizing the Santa Ana River.** Explore opportunities to reintroduce natural habitat along the Santa Ana River to provide natural habitat and educational and recreational opportunities.

Public Services Element

Goal 1: Provide quality and efficient facilities that are adequately funded, accessible, safe, and strategically located.

- **Policy 1.5 Community Benefit.** Collaborate with community stakeholders to expand recreational, educational, cultural opportunities, promote active lifestyles, and maximize community benefit.

Urban Design Element

Goal 3: Create and maintain safe and attractive travelways through coordinated streetscape design.

- **Policy 3.6 Linear Park System.** Support open space improvements along roadways and non-vehicular paths, such as bike or multi-use trails.
- **Policy 3.7 Natural Recreational Amenities.** Enhance natural and recreational features of Santiago Creek and the Santa Ana River corridors and provide linkages throughout the community.
- **Policy 3.11 Urban Forest.** Create a diverse urban forest with a variety of sustainable trees in medians, parkways, public open space, and private development.

Goal 4: Create nodes and urban hubs throughout the City to foster community, education, arts and culture, business activities, entertainment, and establish Santa Ana as a vibrant center.

- **Policy 4.3 Activate Open Space.** Ensure architectural and landscape design activates open space, as a means to promote community interaction and enhance the aesthetic quality of development.
- **Policy 4.5 Open Space at Nodes.** Promote creative, multi-purpose public space within nodes, major development projects, and people places.

Circulation Element

Goal CE-3: A safe, balanced, and integrated network of travelways for non-motorized modes of transportation that connects people to activity centers, inspiring healthy and active lifestyles.

- **Policy CE-3.8 Santa Ana River and Golden Loop.** Proactively pursue the improvement and restoration of the Santa Ana River natural habitat and the completion of the Golden Loop to serve as a multi-use recreational amenity.

5.15.4 Environmental Impacts

The following impact analysis addresses thresholds of significance related to recreational facilities. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.15-1: The General Plan update would generate additional residents that would increase the use of existing park and recreational facilities. [Threshold R-1]

The projected increase in population from the General Plan update would lead to additional demands on parks and recreational facilities in the full buildout scenario. Table 5.15-4, *Existing and Proposed Parkland,* outlines the existing and proposed park acreages.

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Table 5.15-4 Existing and Proposed Parkland

	Santa Ana Plan Area Population	Parkland Standard (acres per 1,000 resident)	Parkland (acres)	Parkland Deficiency (acres)	Total Acres/ 1,000 residents
Existing Conditions (2019)	334,774	2	561.94 [1]	107.56	1.68
Full Buildout (2045)	431,629		563.78[2]	299.48	1.30

Source: Ono 2020.
Notes:
[1] This does not include the two future parks or private parks owned and maintained by homeowner associations.
[2] This includes the two future parks but does not include private parks owned and maintained by homeowner associations.

The projected full buildout would result in an estimated population growth of up to 96,855 additional residents. Table 5.15-4, shows the resultant parkland ratio to buildout of the General Plan Update based on existing parks and facilities in addition to two newly funded parks. Existing and funded parks and facilities would provide approximately 563.78 acres of parkland. Without acquisition of new parkland, population growth related to buildout of the GPU would equate to 1.30 acres per 1,000 residents., which is 0.70 acres below the City's parkland standard.

Without provision of new parks and facilities, buildout in accordance with the GPU, therefore, would exacerbate an existing shortage of recreation facilities. Additional park acres and recreational facilities/community centers would be needed to meet the increasing population demand (Ono 2020). The deficiency would be reduced by park and recreational amenities developed and maintained by the City in addition to private parks and recreational facilities owned and maintained by homeowner associations. The City also acknowledges the concerns raised by the adjacent City of Tustin with respect to adequately projecting and meeting recreational needs of the Dyer/55 Focus Area and other growth areas of the City.

The extent to which the City can plan and implement future planned parks, trails, and other recreational facilities is related to funding availability. As described above, the Quimby Act establishes a funding mechanism for parkland acquisition for all local jurisdictions. Future development in accordance with the General Plan Update would be required to dedicate land or pay in-lieu impact fees per Chapter 34, Article VIII, and Chapter 35, Article IV, of the City's Municipal Code, as well as the Quimby Act. Collected park development impact fees would fund future park acquisition and development and assist the City in achieving the parkland standard of two acres per 1,000 residents. Table 5.15-1 shows the City's current park dedication standard. New residential development, therefore, would be required to meet the City's standards and overall, would result in improving the existing ratio of parkland ratio per City resident. Park and recreational improvements would also be funded by grants and CDBG funds. Provision of parks under implementation of the GPU, which will occur over time, is expected to keep pace with the increase in population growth related to the plan and would not result in a significant impact.

At the General Plan level of analysis, it is speculative and infeasible to evaluate project-specific environmental impacts associated with the specific construction of future park and recreational facilities since specific sites

and time frames for development are unknown. When specific projects are necessitated and subsequently undertaken to meet the growth demands from buildout of the General Plan update, the appropriate level of analysis required under CEQA would be conducted by the City's Park, Recreation, and Community Services Agency.

Furthermore, the City is committed to working closely with cities located adjacent to General Plan Focus Areas when preparing the City of Santa Ana's Parks and Recreation Master Plan to ensure that the Dyer/55 Focus Area and other growth areas of the City provide additional recreation, parks, and core services essential in making complete communities. In addition, identify additional funding sources from new development projects to procure land or in-lieu fees for installation of parks in the immediate vicinity of proposed development in order to minimize the potential for impacts onto adjacent communities with regards to parks and open space utilization. The inclusion of publicly accessible open space is also part of the City of Santa Ana's development standards for residential/ mixed use development projects to address open space and recreation needs.

Therefore, impacts would be less than significant.

Level of Significance Before Mitigation: With implementation of RR REC-1 and RR REC-2 and the policies listed above, Impact 5.15-1 would be less than significant.

Impact 5.15-2: Project implementation would result in environmental impacts to provide new and/or expanded recreational facilities. [Threshold R-2]

The proposed General Plan Update guides growth and development within the City and is not a development project. However, it is estimated that the General Plan buildout would include approximately 564 acres of parkland and recreational facilities assumed to serve the 2045 population. As the population of the City grows, portions of undeveloped land would be improved as parks, recreational facilities, and school playfields to provide residents with new recreational opportunities and to meet the City's parkland standard of two acres per 1,000 residents. Parks are also a permitted use under other land use designations (e.g., residential land uses), which could result in the development of recreational facilities outside of park-designated parcels.

Development and operation of new or expanded recreational facilities may have an adverse physical effect on the environment, including impacts relating to air quality, biological resources, lighting, noise, and traffic. Environmental impacts associated with the construction of new and/or expansions of existing recreational facilities in accordance with the proposed land use plan are addressed separately. Addressing the site-specific impacts of these parks at this time would be beyond the scope of this programmatic EIR. Furthermore, potentially adverse impacts to the environment that may result from the expansion of parks, recreational facilities, and multiuse trails pursuant to buildout of the proposed land use plan would be less than significant upon the implementation of the General Plan update's goals, policies, and actions and existing federal, state, and local regulations. Subsequent environmental review for future individual park developments would also be required. Consequently, impacts from the General Plan update relating to new and/or expanded recreational facilities would be less than significant.

Level of Significance Before Mitigation: Impact 5.15-2 would be less than significant impact.

5.15.5 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.15-1 and 5.15-2.

5.15.6 Mitigation Measures

No mitigation measures are required.

5.15.7 Level of Significance After Mitigation

Impacts would be less than significant.

5.15.8 References

California Department of Finance (DOF). 2019, May. Report E-1: Population Estimates for Cities, Counties, and the State: January 1, 2018 and 2019. http://www.dof.ca.gov/Forecasting/Demographics/Estimates/e-1/.

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Santa Ana, City of. 2010, January. General Plan Open Space, Parks and Recreation Element. https://www.santa-ana.org/sites/default/files/Documents/OpenSpace_Parks_Rec.pdf.

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5.16 TRANSPORTATION

This section of the Draft Program Environmental Impact Report (PEIR) evaluates the potential for implementation of the City of Santa Ana General Plan Update (GPU) to result in transportation and traffic impacts in the City of Santa Ana and its sphere of influence (plan area). This section presents the existing transportation conditions in the plan area, including the roadway network, bicycle and pedestrian network, transit network, and current intersection and roadway segment operations. This section also discusses the methodology used to evaluate impacts. The analysis in this section is based in part on the following technical report:

- *Santa Ana General Plan Update Traffic Impact Study*, IBI, July 2020

A complete copy of this study is in the technical appendices to this Draft PEIR (Volume III,, Appendix K).

Note that IBI's traffic impact study (TIA) includes a comprehensive analysis of the potential impact of buildout of the GPU on the level of service (LOS) of 105 area intersections (including several intersections in adjacent cities) and 60 roadway segments. The results of this LOS analysis, however, are not reproduced or summarized in this EIR section because, pursuant to SB 743—passed in September 2013 and incorporated into updated CEQA Guidelines approved in December 2018—LOS and auto delay are no longer metrics to evaluate transportation impacts under CEQA. The updated guidelines codify the switch from LOS to vehicle miles traveled (VMT) as the metric for transportation analysis. VMT refers to the amount and distance of automobile travel attributable to a project. Although the LOS analysis in the TIA is not used to evaluate environmental impacts, the analysis supports the GPU and associated transportation standards of service in the circulation element.

5.16.1 Environmental Setting

5.16.1.1 REGULATORY BACKGROUND

The following summarizes the transportation policies, laws, and regulations that would apply to the GPU. These regulations provide the context for the impact discussion related to the proposed GPU's potentially significant effects.

State

California Transportation Commission

The California Transportation Commission (CTC) administers the public decision-making process that sets priorities and funds projects envisioned in long-range transportation plans. The CTC's programming includes the State Transportation Improvement Program, a multiyear capital improvement program of transportation projects on and off the state highway system, funded with revenues from the State Highway Account and other funding sources. The California Department of Transportation (Caltrans) manages the operation of state highways.

California Department of Transportation

Caltrans is the primary state agency responsible for transportation issues. One of its duties is the construction and maintenance of the state highway system. Caltrans approves the planning, design, and construction of improvements for all state-controlled facilities, including I-5, SR-55, SR-22, and the associated interchanges for these facilities in Santa Ana. Caltrans has standards for roadway traffic flow and has developed procedures to determine if state-controlled facilities require improvements. For projects that may physically affect facilities under its administration, Caltrans requires encroachment permits before any construction work may be undertaken. Caltrans also prepares comprehensive planning documents, including corridor system management plans and transportation concept reports, which are long-range planning documents that establish a planning concept for state facilities.

California Manual of Uniform Traffic Control Devices

The California Manual on Uniform Traffic Control Devices (California MUTCD) is published by the State and is issued to adopt uniform standards and specifications for all official traffic control devices in California, in accordance with Section 21400 of the California Vehicle Code. Effective March 27, 2020, Caltrans has made edits, referred to as Revision 5 (Rev. 5), to the 2014 California MUTCD (Caltrans 2020).

Senate Bill 743

On September 27, 2013, SB 743 (Steinberg, 2013) was signed into law. A key element of this law is the potential elimination or deemphasizing of auto delay, LOS, and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts in many parts of the state. According to the legislative intent of SB 743, these changes to current practice were necessary 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 (GHG). The Legislature found that with adoption of the Sustainable Communities and Climate Protection Act of 2008 (SB 375), the state had signaled its commitment to encourage land use and transportation planning decisions and investments that reduce VMT and thereby contribute to the reduction of GHG, as required by the California Global Warming Solutions Act of 2006, Assembly Bill (AB) 32. Additionally, AB 1358, described below, requires local governments to plan for a balanced, multimodal transportation network that meets the needs of all users.

SB 743 started a process that fundamentally changes transportation impact analysis as part of CEQA compliance. These changes include the elimination of auto delay, LOS, and similar measures of vehicular capacity or traffic congestion as the basis for determining significant transportation impacts. As part of the new CEQA Guidelines, the new criteria were designed to promote the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses. The Office of Planning and Research (OPR) developed alternative metrics and thresholds based on VMT. The guidelines were certified by the Secretary of the Natural Resources Agency in December 2018, and automobile delay, as described solely by LOS or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment. Agencies had until July 1, 2020, to adopt new VMT-based criteria.

The City has developed VMT-based significance criteria and methodology to evaluate the transportation impacts of the GPU as well as future projects in the City's jurisdiction. Section 5.16.1.2 describes existing VMT conditions and averages in the city and county, and Section 5.16.2.2 details the significance thresholds to be applied. Finally, the impact analysis for the GPU following the new VMT metric is in Section 5.16.4.

AB 1358: California Complete Streets Act of 2008

The California Complete Streets Act of 2008 was signed into law on September 30, 2008. Beginning January 1, 2011, AB 1358 required circulation elements to address the transportation system from a multimodal perspective. The bill states that streets, roads, and highways must "meet the needs of all users…in a manner suitable to the rural, suburban, or urban context of the general plan." Essentially, this bill requires a circulation element to plan for all modes of transportation where appropriate—including walking, biking, car travel, and transit.

The Complete Streets Act also requires circulation elements to consider the multiple users of the transportation system, including children, adults, seniors, and the disabled. For further clarity, AB 1358 tasked OPR to release guidelines for compliance, which were released in December 2010.

SB 375: Sustainable Communities and Climate Protection Act

On December 11, 2008, the California Air Resources Board adopted its proposed Scoping Plan for AB 32, the Global Warming Act. This scoping plan included the approval of SB 375 as the means for achieving regional transportation-related GHG targets. SB 375 provides guidance on how curbing emissions from cars and light trucks can help the state comply with AB 32.

There are five major components to SB 375. First, SB 375 addresses regional GHG emission targets. The Air Resources Board's Regional Targets Advisory Committee guides the adoption of targets to be met by 2020 and 2035 for each metropolitan planning organization (MPO) in the state. These targets, which MPOs may propose themselves, are updated every eight years in conjunction with the revision schedule of housing and transportation elements.

Second, MPOs are required to create a sustainable communities strategy (SCS) that provides a plan for meeting regional targets. The SCS and the regional transportation plan (RTP) must be consistent with each other, including action items and financing decisions. If the SCS does not meet the regional target, the MPO must produce an Alternative Planning Strategy that details an alternative plan to meet the target.

Third, SB 375 requires that regional housing elements and transportation plans be synchronized on eight-year schedules. In addition, Regional Housing Needs Assessment allocation numbers must conform to the SCS. If local jurisdictions are required to rezone land as a result of changes in the housing element, rezoning must take place within three years.

Fourth, SB 375 provides CEQA streamlining incentives for preferred development types. Residential or mixed-use projects qualify if they conform to the SCS. Transit-oriented developments also qualify if they 1) are at least 50 percent residential, 2) meet density requirements, and 3) are within one-half mile of a transit stop. The degree of CEQA streamlining is based on the degree of compliance with these development preferences.

Finally, MPOs must use transportation and air emission modeling techniques consistent with guidelines prepared by the CTC. Regional transportation planning agencies, cities, and counties are encouraged but not required to use travel demand models consistent with the CTC guidelines.

California Fire Code

The 2019 California Fire Code sets requirements pertaining to fire safety and life safety, including for building materials and methods, fire protection systems in buildings, emergency access to buildings, and handling and storage of hazardous materials (California Code of Regulations Title 24 Part 9).

Regional

Orange County Fire Authority Fire Prevention Guidelines

The Orange County Fire Authority's guideline for "Fire Master Plan for Commercial and Residential Development" (Guideline B-09) is a general guideline pertaining to the creation and maintenance of fire department access roadways, access walkways to and around buildings, and hydrant quantity and placement, as required by the 2019 California Fire and Building Codes and as amended by local ordinance.

Southern California Association of Governments' Regional Transportation Plan and Sustainable Communities Strategy

SCAG's Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) is a long-range plan that provides a vision for transportation investments throughout the southern California region. The SCS integrates land use and transportation strategies that will achieve California Air Resources Board emissions reduction targets. SCAG is the metropolitan planning organization for a six-county region that includes Santa Ana and 188 other cities. The RTP/SCS is supported by a combination of transportation and land use strategies that help the region achieve state GHG emission reduction goals and federal Clean Air Act requirements, preserve open space areas, improve public health and roadway safety, support our vital goods movement industry, and utilize resources more efficiently. The latest RTP/SCS was completed and adopted in May 2020.

South Coast Air Quality Management District, Air Quality Management Plan

The South Coast Air Quality Management District is the federally mandated agency that is assigned the responsibility for promulgating and enforcing regulations to achieve compliance with national and state air quality standards. The air district's central mandate is reflected in its 2016 Air Quality Management Plan, which is the region's blueprint for achieving air quality standards in the South Coast Air Basin. Because of the importance of motor vehicles—the primary source of air pollution—substantial emphasis is placed on reducing motor vehicle travel and increasing transit ridership. The plan relies on regulatory and incentive-based approaches to reducing pollution while eliminating reliance on future uncertain technologies.

Orange County Measure M

Measure M (also called OC Go) was approved by Orange County voters in 1990. The measure raises the sales tax by one-half cent for 50 years (to 2041) for projects and programs that alleviate traffic congestion. To be

eligible for Measure M funds, a general plan circulation element must be consistent with Measure M requirements. The element must contain a growth management program that includes LOS standards, monitoring program, development phasing with circulation improvements, and impact fees.

Key parts of the growth management program—including the standard for traffic circulation as LOS D—are incorporated into the circulation element. To achieve this standard, the City requires that new development pay its fair share of the street improvement costs associated with proposed projects, including improvements for regional traffic mitigation.

Orange County Transportation Authority Long Range Transportation Plan

The Orange County Transportation Authority (OCTA) Long Range Transportation Plan (LRTP) outlines the vision and plan for multimodal transportation in Orange County. OCTA prepares the LRTP and submits it to SCAG so that county transportation projects will be incorporated into the regional transportation plan and subsequently programmed into the Federal Transportation Improvement Program. For the 2017 update, the LRTP has four goals: 1) deliver on commitments; 2) improve transportation system performance, 3) expand transportation system choices; and 4) support sustainability.

Master Plan of Arterial Highways

The Master Plan of Arterial Highways (MPAH) was established in 1956 to ensure that a regional arterial highway network would be developed to supplement Orange County's developing freeway system. OCTA is responsible for administering the MPAH, including the review and approval of amendments. The MPAH map is a critical element of transportation planning and operations because it defines a countywide circulation system in response to existing and planned land uses. It is regularly updated to reflect changing development and traffic patterns.

In order to be eligible for Measure M revenues and programs, a city's circulation element must be consistent with the MPAH and maintain the minimum number of lanes on each arterial in the MPAH.

Districts 1 and 2 Bikeways Strategy (2013)

OCTA's regional bikeways planning expanded the 2009 OCTA Commuter Bicycle Strategic Plan to identify potential regional bikeway improvements. The Districts 1 and 2 Bikeways Strategy identifies 11 regional bikeway corridors that connect to major activity centers, including employment areas, transit stations, and colleges and universities. The corridors include key connections to regional bikeway routes (e.g., Santa Ana River and Coyote Creek trails) and major destinations within the districts. The City's bikeway network builds off OCTA's Strategic Plan by routes that will connect to the regional bikeway network and those proposed by surrounding cities.

OCTA's OC Transit Vision

The OC Transit Vision is a 20-year plan for enhancing and expanding public transit service in Orange County. Adopted in 2018, the Transit Vision focuses future investments along transit opportunity corridors on major arterials and freeways in and surrounding Santa Ana. The Transit Vision also supports improvements to rail service planned by Metrolink and other partner agencies, including plans to improve station access and reduce

the number of at-grade road crossings. The circulation element adopts the transit opportunity corridors as part of its transit plan.

Local

Santa Ana Climate Action Plan

Santa Ana's Climate Action Plan represents the City's commitment to improving quality of life by reducing carbon pollution from its own operations and the community. The climate action plan is intended to comply with State mandates for addressing global warming. The strategies proposed will improve air quality, reduce energy and water use, reduce traffic congestion, and accrue other environmental improvements. A key focus of the transportation and land use goals involves creating more opportunities for walking and bicycling; investing in public transit and rail opportunities; and concentrating future housing, commercial, and office development in areas that complement transit improvements.

Santa Ana Vehicle Miles Traveled Analysis Guidelines

The City's VMT Guidelines are based on the OPR's "Technical Advisory on Evaluating Transportation Impacts in CEQA." A VMT analysis is required for land use and transportation projects that have the potential to increase the average VMT per service population (VMT/SP). The VMT impact thresholds are:

- **Land Use Plans:** A project should be considered to have a significant impact if the project VMT/SP (for the land use plan) is not at least 15 percent below the existing total daily VMT/SP for the county.
- **Transportation Projects:** A significant impact would occur if the project increases the baseline VMT in the city.

Santa Ana Active Transportation Plan

The active transportation plan includes recommendations meant to support and increase bicycling and walking in Santa Ana, enhance nonmotorized travel infrastructure, and create options to support the existing population. The active transportation plan includes an inventory of existing bike and pedestrian infrastructure, identifies deficiencies, develops and prioritizes improvements, and strengthens pedestrian and bicycle policies in the regional transportation plan (Santa Ana 2019a).

Central Santa Ana Complete Streets Plan

The Central Santa Ana Complete Streets Plan is a guide to establish a network of "complete streets" to improve bicycling and walking throughout central Santa Ana. Issues in central Santa Ana include high vehicle speeds and traffic volumes, wide roadway crossings, a lack of dedicated bicycle facilities, and a large number of uncontrolled pedestrian crossings. To address these challenges, the City envisioned this Complete Streets Plan to improve access and mobility for all modes, including walking, bicycling, transit, and motor vehicles. The plan looks at complete streets methods and designs to improve these modes within and around central Santa Ana. The City identified 11 corridors as candidates for improvements based on multiple criteria and previous planning efforts (Santa Ana 2018).

Downtown Santa Ana Complete Streets Plan

The Transit Zone area in Santa Ana is between the Santa Ana Regional Transportation Center and the Downtown (see Figure 3-10). The area is accessible by walking, biking, transit, or automobile, but the commingling of different transportation modes in this area is problematic because of high vehicle speeds and traffic volumes, wide roadway crossings, a lack of dedicated bicycle facilities, and a large number of uncontrolled pedestrian crossings. To address these issues, the City has implemented the Downtown Complete Streets Plan to improve access and mobility for all modes. The plan looks at Complete Streets methods and designs to improve these modes within and around the Downtown (Santa Ana 2016a).

Santa Ana Safe Mobility Plan

The Safe Mobility Plan's goal is to substantially increase safe mobility in all areas of the city, achieve zero fatal bicycle/pedestrian collisions, reduce vehicle speeds, and minimize demonstrated collision patterns. Its objectives include:

- Reduce collisions citywide, while focusing capital investments at high collision locations.
- Recommend solutions to evolve the roadway network into one where people can make transportation decisions and unanticipated mistakes without risk of severe injury or death.
- Reject severe and fatal injuries as a necessary by-product of multimodal transportation.
- Prioritize traffic safety over congestion management, accepting that improving safety for all roadway users will in some cases result in unavoidable delay.
- Suggest infrastructure improvements that reduce speeds and separate vulnerable roadway users from moving traffic.
- Provide a balance of engineering, education, and enforcement solutions to shift toward a safety culture. (Santa Ana 2016b)

Santa Ana Municipal Code

The Santa Ana Municipal Code identifies land use categories, development standards, and other general provisions that ensure consistency between the GPU and proposed development projects. The following provisions focus on transportation and traffic:

- **Chapter 36, Traffic:** Provisions of this chapter define traffic regulations including regulations for pedestrians and bikeway traffic. The chapter also includes standards for traffic control devices and an article on transportation management (Article XIII). The intent of Article XIII is to meet the requirements of:
  - Government Code Section 65089 (b)(3), which requires development of a trip reduction and travel demand element as part of the congestion management program, and Government Code Section 65089.3(b), which requires adoption and implementation of a trip reduction and travel demand ordinance.

- The Orange County Revised Traffic Improvement and Growth Management Ordinance (approved as Measure M by the voters of Orange County in the general election of November 6, 1990) requirement for the adoption of a transportation system management ordinance or alternative mitigation to reduce single occupancy automobile travel.

- **Chapter 33: Streets, Sidewalks and Public Works.** This chapter establishes regulations and procedures for the construction, repair, and reconstruction of streets and alleys.

5.16.1.2 EXISTING CONDITIONS

Santa Ana's circulation system includes more than 500 miles of roadway and many miles of freeways, railways, and other travelways. The system also includes sidewalks and trails, bicycle routes, transit routes, and associated facilities. Table 5.16-1 and the following sections describe each type of street classification in Santa Ana.

Table 5.16-1 Street Classifications in Santa Ana

Street Classification	Description
Major Arterial	A street with six travel lanes and a center median. Typically includes bus transit, pedestrian sidewalks, and bicycle lanes. Example: Bristol Street.
Primary Arterial	Typically a roadway with four travel lanes and a center median. Typically includes pedestrian sidewalks and may include bus transit services and bicycle lanes. Example: 4th Street east of Grand Avenue.
Secondary Arterial	A roadway with four travel lanes and no center median. Typically provides sidewalks and may include bus transit and bicycle lanes. Serves more local traffic than a Primary Arterial. Example: Civic Center Drive.
Divided Collector Arterial	Typically a roadway with two travel lanes and a continuous, central two-way left-turn lane, but it may be divided by a raised median as well. Right-of-way typically is 80 feet to accommodate bicycle lanes. Example: Flower Street south of 1st Street.
Collector Street	A roadway with two travel lanes and no center median. Typically includes sidewalks and may include shared bicycle routes. Example: Broadway south of 1st Street.
Local Street	A roadway with two travel lanes serving residences and businesses. Typically includes sidewalks and on-street parking. May include shared bicycle routes.

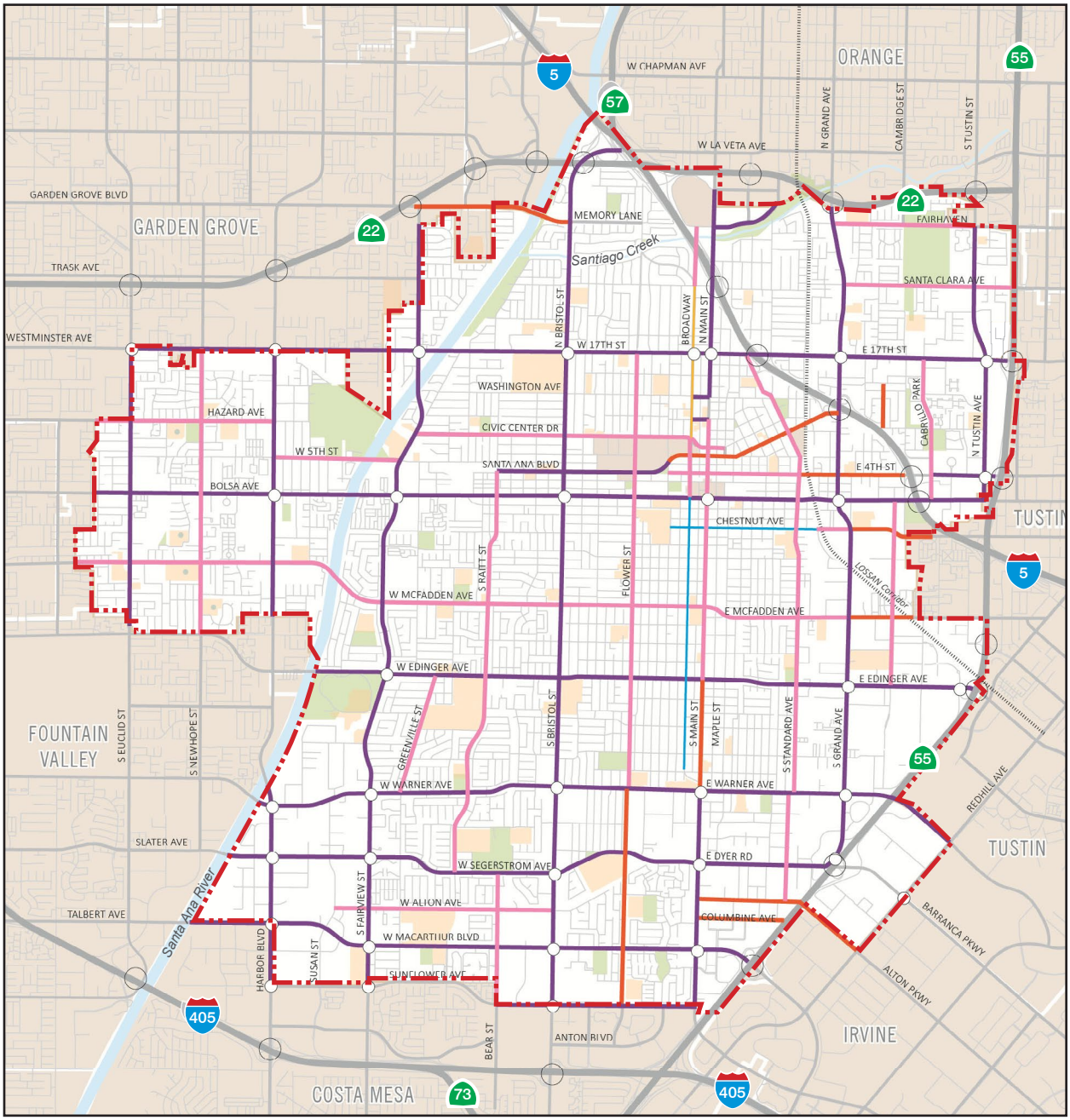
Existing Roadway Network

The Master Plan of Streets and Highways (MPSH) is the City's plan for a roadway network that effectively and safely provides mobility options for bicyclists, pedestrians, vehicles, and transit passengers. This plan offers an integrated system of roadways and connections essential to the city.

Each of the MPSH's different roadway classifications is designed for a specific purpose, intended use, and volume of travel. The following describes each type of roadway classification, and Figure 5.16-1, *Current Master Plan of Streets and Highways,* illustrates their locations in Santa Ana.

- **Freeways.** A multilane, high-volume, high-speed roadway for regional and interregional vehicular travel. These include I-5, SR-22, SR-55, and SR-57. Access to these facilities is restricted to interchange ramps at selected roadways. Freeways are under the authority of Caltrans.

Figure 5.16-1 - Current Master Plan of Streets and Highways



City of Santa Ana
Freeway
Principal
Major Arterial
Primary Arterial
Secondary Arterial
Commuter
Local Commercial
Interchange
Enhanced Intersections

0 1
Scale (Miles)

Source: City of Santa Ana, 2019

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- **Principal Arterial.** An eight-lane divided roadway, with a typical right-of-way width of 144 feet and a roadway width of 126 feet from curb to curb, including a 14-foot median. A principal arterial is designed to accommodate 45,000 to 67,500 trips daily.

- **Major Arterial.** A six-lane divided roadway with a typical right-of-way width of 120 feet and a roadway width of 100 feet from curb to curb, including a 14-foot median. A major arterial is designed to accommodate 33,900 to 50,600 vehicle trips daily.

- **Primary Arterial.** A four-lane divided roadway with a typical right-of-way width of 100 feet and a roadway width of 84 feet from curb to curb, including a 14-foot median. A primary arterial is designed to accommodate between 22,500 and 33,800 vehicle trips daily.

- **Secondary Arterial.** A four-lane undivided (no median) roadway with a typical right-of-way width of 80 feet and a roadway width of 64 feet from curb to curb. A secondary arterial is typically designed to accommodate 15,000 to 22,500 vehicle trips daily.

- **Collector and Divided Collector**. A two-lane unrestricted access roadway (divided or undivided) with a typical right-of-way width of 56 feet and a roadway width from curb to curb of 40 feet. A divided collector street is designed to accommodate up to 22,000 vehicle trips daily.

Although not part of the MPSH, the remainder of the city's roadway system includes public residential streets and a few private streets.

Existing Traffic Conditions

The VMT analysis was prepared in conformance with the City of Santa Ana VMT Analysis Guidelines. VMT is defined as the total miles traveled by vehicles (within a transportation network). A VMT analysis may be conducted for large-scale projects such as land use plans or individual transportation/development projects. For large-scale projects, it is appropriate to assess VMT impacts based on total VMT per service population for the entire county. Service population consists of the total employees and population that generate the VMT.

VMT was generated with data from the Orange County Transportation Authority Model (OCTAM 5.0).[1] The existing year (2020) VMT was developed through linear interpolation of the OCTAM 5.0 baseline 2016 and 2045 scenarios. Table 5.16-2 presents the VMT analysis results for the existing year (2020) scenario.

[1] The Orange County Transportation Authority Model (OCTAM) is OCTA's regional model that is used to analyze VMT modes of travel: local and express bus transit, urban rail, commuter rail, toll roads, carpools, truck traffic, as well as nonmotorized based on changes in land use types, household characteristics, transportation infrastructure, and travel costs such as transit fares, parking costs, tolls, and auto operating costs.

Table 5.16-2 Existing Year (2020) VMT Summary

	Total VMT	Service Population[1]	VMT/SP
City	11,407,124	507,904	22.5
County	99,344,141	3,834,949	25.9

Source: IBI 2020.

[1] Service population consists of the aggregate of total employees and population within the County. When aggregating employees and residents, an employee reduction factor was applied to account for overlaps in the two (employees who are also residents). Reduction factors are based on employment data in SCAG's Local Profiles Reports (2019). The SCAG reports show that 65.3% of employees within the county are also residents of the county.

Public Transportation System

OCTA is the leading transit provider in Orange County, offering a wide range of fixed-route bus service. OCTA has developed an extensive network of transit routes to connect residents and commuters to key destinations. There are five primary types of routes.

- **Local routes** operate on arterials within the grid created by the major routes, but at lower frequencies. Most local routes operate seven days per week, but some operate on weekdays only.
- **Community routes** connect with major destinations but are less direct because they serve neighborhoods and destinations off the arterial grid. Half of the routes operate seven days per week.
- **Stationlink routes** provide connections solely between Metrolink stations and nearby destinations such as job centers. They should operate only during peak periods and in the peak direction to and from stations.
- **Express routes** serve long trips during peak periods, primarily commute trips to job centers. Because they mainly serve commuters who own automobiles, access to these routes is primarily by car.
- **Bravo routes** operate every 15 minutes or better during peak times, seven days a week. Major routes form a grid on arterial streets for the areas with highest transit use. Bravo limited-stop services are included.

OCTA also provides transit services for people who have a disability through OC ACCESS. OC ACCESS buses will pick up disabled residents who live within a quarter mile of an OCTA fixed bus route. This door-to-door service is offered anywhere in Orange County near fixed routes. Services are consistent with all federal Title V requirements. The majority of Santa Ana residential areas are covered by this service.

The Southern California Regional Rail Authority also provides commuter and passenger rail service to Santa Ana. The Metrolink Orange County Line and the Inland Empire-Orange County commuter line travel through Santa Ana, with scheduled stops at the Santa Ana Regional Transportation Center. Amtrak's Pacific Surfliner also provides passenger rail service through Santa Ana, connecting to communities throughout the Los Angeles and San Diego metropolitan regions. Figure 5.16-2, *Current Transit Network,* shows the current local transit routes in Santa Ana.

Bikeway Network

Bicycling is encouraged throughout Santa Ana, and the City continues to make fiscal commitments to significantly expand the existing network of bikeways throughout the community.

Bikeway Classifications

Santa Ana's bikeway network includes four classifications that are tailored to the dimensions of the MPSH. Figure 5.16-3, *Current Bikeway Network*, shows the city's current bikeway routes.

Class 1 Bicycle Path

Class 1 bicycle paths are paved rights-of-way for the exclusive use of bicyclists and pedestrians. Bike paths are physically separated from vehicle traffic and are generally built in locations not served by streets or where vehicular crossflows are minimized. Class 1 bike paths include the Santa Ana River Trail and several segments of Alton Avenue/Maple Street, Santiago Creek Trail, Flower Street, Santa Ana Gardens Channel/Bear Street, and MacArthur Boulevard.

Class 2 Bicycle Lane

Class 2 bicycle lanes are one-way routes denoted by a striped lane on a roadway to delineate the rights-of-way assigned to vehicles and bikes. Bicycle lanes can be striped adjacent to the curb where no parking exists or striped to the left side of on-street parking lanes. Existing Class 2 bike lanes in Santa Ana are provided along Bristol Street, Greenville Street, Memory Lane, and Ross Street. Class 2 bike lanes were recently implemented on Newhope Street between Westminster Avenue and McFadden Avenue. Where bikeways are built on major arterials, they may be Class 2.

Class 3 Bicycle Route

Class 3 bicycle routes are bikeways where cyclists share the travel lane with motor vehicles. Class 3 bike routes are typically on low-volume roadways, such as local streets in residential neighborhoods, and may be designated by signage or roadway markings (called sharrows). Although not always designated by signage, most streets in low-traffic-volume residential neighborhoods are classified as Class 3 routes.

Class 4 Bicycle Cycle Track

Class 4 bicycle cycle tracks are local roads that have been enhanced with treatments that prioritize bicycle travel. These treatments might include wayfinding signage, bollards, and traffic-calming features that facilitate safe and convenient bicycle travel, slow vehicle speeds, and minimize vehicular traffic volumes. Bristol Street has a Class 4 cycle. Edinger Avenue between Santa Ana River and Bristol Street has a Class 4 cycle track under construction.

Pedestrian Facilities

Santa Ana's pedestrian system consists of pathways, sidewalks, and crossings. Existing pedestrian pathways include the Santa Ana River Trail. Sidewalks are provided on both sides of streets throughout most of the city. Pedestrian crossings are provided at most intersections, with a variety of crossing treatments. These treatments include parallel-striped crosswalks at signals, countdown signals, pedestrian-activated signals with audio/visual warnings, bulb-outs, and median refuges that reduce crossing distances.

The foundation of a comfortable and safe pedestrian environment is the sidewalk. As public spaces, sidewalks serve as the front steps to the city and various districts and neighborhoods. Santa Ana has made it a priority to install marked crosswalks at protected (signalized or stop-controlled) intersections if their presence minimizes pedestrian-auto conflicts. The City has also prioritized improving intersections near schools to create safe walking environments under its growing Safe Routes to School program.

Santa Ana intends to have a continuous pedestrian network that supports active living; provides for safe and healthy transportation; and enables people of all ages and abilities to access jobs, recreation, school, shopping, and transit by foot or bicycle as a part of daily life. To that end, the City is in the process of developing a pedestrian plan that: 1) increases pedestrian safety; 2) creates or reinvents streets and places that promote walking; 3) improves walking to key destinations; and 4) engages the community in creating improvements.

Truck Routes

National Truck Routes

The interstate freeway system and California highways across and near Santa Ana provide routes for the movement of goods. These include I-5, SR-22, SR-55, SR-57, and I-405. Access to freeways is restricted to interchange ramps. These freeways and associated ramps are under the authority of Caltrans and part of a statewide and national network of truck routes that carry a vast amount of goods through California.

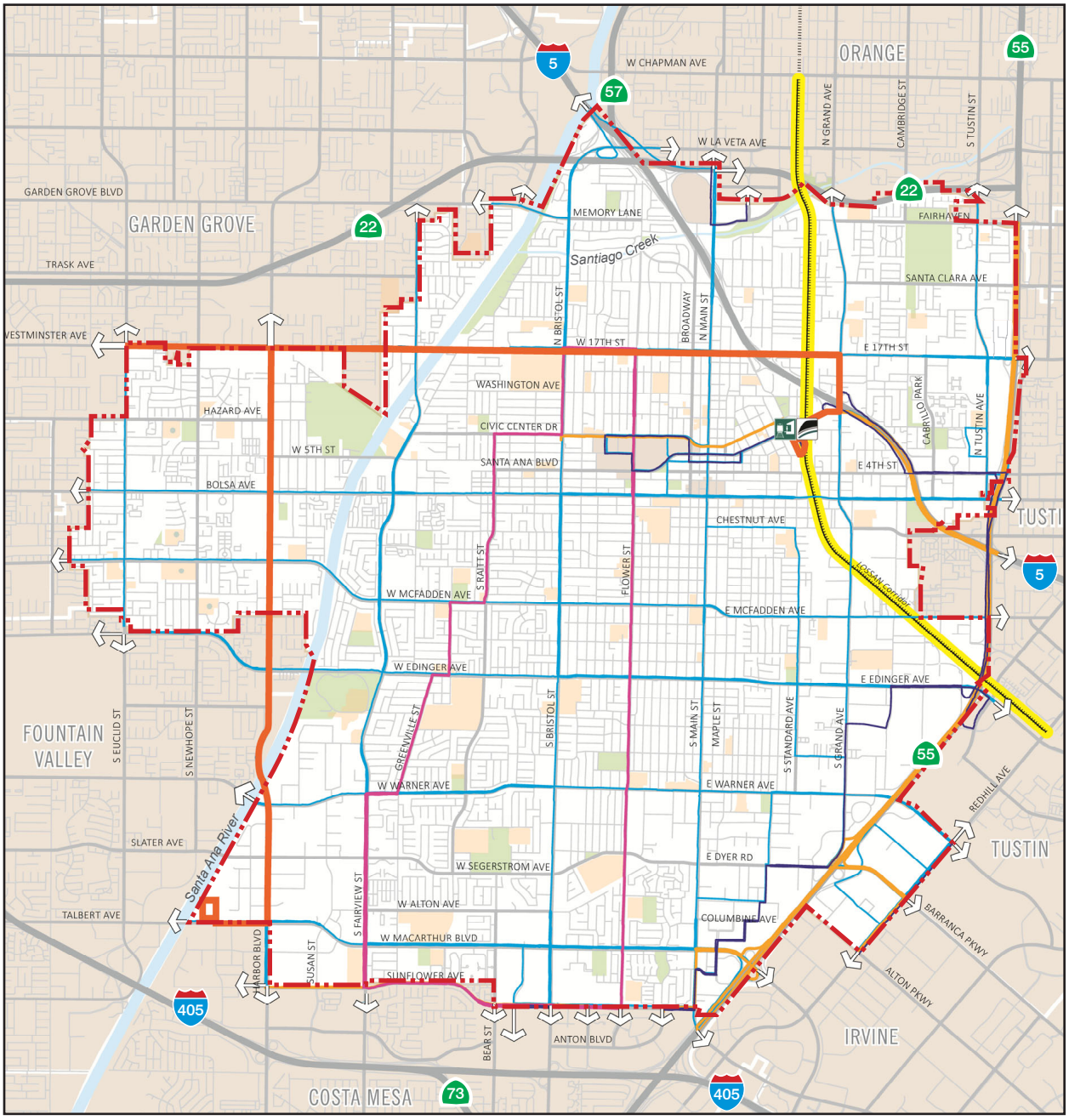
Local Truck Routes

The city's street system supports goods movement via designated routes. Truck routes are designated roadways in Santa Ana that allow for the movement of goods on trucks. These routes may include terminal access routes for "super trucks." These routes are often major or primary arterials that connect to freeways. Except for local deliveries, trucks are prohibited from driving on residential streets or low-volume roadways.

Freight Rail

Santa Ana is served by two Class 1 railroads—the Union Pacific Railroad and the Burlington Northern and Santa Fe Railway. Freight train activity varies daily and depends on demand from commercial and industrial businesses. Both railroad lines serve Santa Ana. These freight lines ship goods and materials throughout the nation as part of the transcontinental network of rail lines. Generally, the volume of goods is low compared to other areas. The two rail providers average approximately 12 trains daily in Santa Ana.

Figure 5.16-2 - Current Transit Network



City of Santa Ana
Local Bus Route
Community Bus Route
Stationlink Bus Route
Express Bus Route
Bravo Bus Route
Metrolink and Amtrak Commuter Rail
Santa Ana Regional Transportation Center
Metrolink Station

0 1
Scale (Miles)

Source: City of Santa Ana, 2019

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Figure 5.16-3 - Current Bikeway Network



- City of Santa Ana
- Class I Path
- Class II Bike Lane
- Class III Bike Route/Boulevard
- Existing Routes to Adjacent Cities

0 1
Scale (Miles)

Source: City of Santa Ana, 2019

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5.16.2 Thresholds of Significance

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

T-1 Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

T-2 Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b).

CEQA Guidelines Section 15064.3 (b) provides criteria for analyzing transportation impacts 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 standard of adequacy in Section 15151 shall apply to the analysis described in this section.

The City has adopted significance thresholds pursuant to these CEQA Guidelines as detailed in the City's Local Guidelines for Implementation of the California Environmental Quality Act (Santa Ana 2019b). The relevant thresholds for the GPU, including the circulation element, are as follows:

1. Land Use Plans: A project should be considered to have a significant impact if the project VMT/SP (for the land use plan) is not equal to or less than 15 percent below the existing total daily VMT/SP for the county.

2. Transportation Projects: A significant impact would occur if the project increases the baseline VMT.

T-3 Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

T-4 Result in inadequate emergency access.

5.16.3 Regulatory Requirements and General Plan Update Policies

5.16.3.1 REGULATORY REQUIREMENTS

RR T-1 The City will design and operate a balanced, multimodal circulation system network with all users in mind—including bicyclists, public transportation vehicles and riders, and pedestrians of all ages and abilities in line with the California Complete Streets Act (Assembly Bill 1358).

RR T-2 Projects pursuant to the General Plan Update will implement fire protection requirements as detailed in the Orange County Fire Authority's Fire Prevention Guidelines and in the California Fire Code.

5.16.3.2 GENERAL PLAN UPDATE POLICIES

Circulation Element

- **Policy 1.2 Balanced Multimodal Network.** Provide a balanced and equitable multimodal circulation network that reflects current and changing needs.

- **Policy 1.6 Complete Streets.** Transform travelways to accommodate all users through street design and amenities, such as sidewalks, trees, landscaping, street furniture, and bus shelters.

- **Policy 1.7 Proactive Mitigation.** Proactively mitigate potential air quality, noise, congestion, safety, and other impacts from the transportation network on residents and business.

- **Policy 1.9 Regional Consistency.** Ensure the street network is consistent with standards set in the OCTA Master Plan of Arterial Highways and the Congestion Management Program.

- **Policy 2.2 Transit Service.** Work with regional and local entities to provide residents, workers and visitors with safe, affordable, accessible, convenient, and attractive transit services.
- **Policy 2.4 Commuter Rail.** Support the expansion of commuter rail services and Santa Ana's role as a destination along the Los Angeles–San Diego–San Luis Obispo (LOSSAN) rail corridor.
- **Policy 2.5 OC Streetcar.** Support development and expansion of the OC Streetcar project, connecting neighborhoods, employment centers, and Downtown Santa Ana to activity centers in Orange County.
- **Policy 2.6 Transit Corridors.** Work with OCTA to support the improvement of transit opportunity corridors to facilitate high frequency transit (e.g., bus rapid transit and other modes) along designated corridors in Santa Ana.
- **Policy 2.7 Regional Mobility Access.** Enhance access to regional transit, including first and last mile connections, to encourage the use of public transit.
- **Policy 3.1 Nonmotorized Travelway Network.** Expand and maintain a citywide network of nonmotorized travelways within both the public and private realms that create linkages between neighborhoods, recreational amenities, schools, employment centers, and activity centers.
- **Policy 3.2 Nonmotorized Travelway Amenities.** Enhance nonmotorized travelways with amenities such as landscaping, shade trees, lighting, benches, crosswalks, rest stops, bicycle parking, and support facilities that promote a pleasant and safe experience.
- **Policy 3.3 Safe Routes to School.** Lead the development and implementation of safer routes to school by partnering with the school district, residents, property owners, and community stakeholders.
- **Policy 3.4 Regional Coordination.** Coordinate development of the City's active transportation and transit network with adjacent jurisdictions, OCTA, and other appropriate agencies.
- **Policy 3.5 Education and Encouragement.** Encourage active transportation choices through education, special events, and programs.
- **Policy 3.6 Transit Connectivity.** Enhance first and last mile connectivity to transit facilities through safe, accessible, and convenient linkages.
- **Policy 3.7 Complete Streets Design.** Enhance streets to facilitate safe walking, bicycling, and other nonmotorized forms of transportation through community participatory design.
- **Policy 3.9 Neighborhood Traffic.** Develop innovative strategies to calm neighborhood traffic, increase safety, and eliminate collisions.
- **Policy 4.1 Intense Development Areas.** Program multimodal transportation and public realm improvements that support new development in areas along transit corridors and areas planned for high intensity development.

- **Policy 4.2 Project Review.** Encourage active transportation, transit use, and connectivity through physical improvements and public realm amenities identified during the City's Development Review process.

- **Policy 4.3 Transportation Management.** Coordinate with OCTA, employers, and developers to utilize TDM (transportation demand management) strategies and education to reduce vehicle trips and parking demands.

- **Policy 4.6 Roadway Capacity Alternatives.** Promote reductions in automobile trips and vehicle miles traveled by encouraging transit use and nonmotorized transportation as alternatives to augmenting roadway capacity.

- **Policy 5.7 Infrastructure Condition.** Enhance travelway safety by maintaining streets, alleys, bridges, sidewalks, lighting, and other transportation infrastructure in excellent condition.

- **Policy 5.8 Traffic Safety.** Prioritize the safety of all travelway users when designing transportation and related improvement and rehabilitation projects.

Urban Design Element

- **Policy 1.5 Attractive Public Spaces.** Encourage community interaction through the development and enhancement of plazas, open space, people places, and pedestrian connections with the public realm.

- **Policy 1.6 Active Transportation Infrastructure.** Support the creation of citywide public street and site amenities that accommodate and promote an active transportation-friendly environment.

- **Policy 3.3 Foster Community Building.** Promote a safe environment that facilitates social interaction and improves active transportation along corridors.

- **Policy 5.4 Intersections for all Travel Modes**. Strengthen active transportation connections and amenities at focal intersections to promote a pleasant and safe experience for non-motorized forms of travel.

Community Element

- **Policy 3.7 Active Lifestyles.** Support programs that create safe routes to schools and other destinations to promote walking, biking and active lifestyles.

Conservation Element

- **Policy 1.6 New and Infill Residential Development.** Promote development that is mixed-use, pedestrian-friendly, transit oriented, and clustered around activity centers.

- **Policy 1.8 Promote Alternative Transportation.** Promote use of alternate modes of transportation in the City of Santa Ana, including pedestrian, bicycling, public transportation, car sharing programs and emerging technologies.

- **Policy 1.9 Public Investment Alternative Transportation Infrastructure. Continue** to invest in infrastructure projects that support public transportation and alternate modes of transportation in the City of Santa Ana, including pedestrian, bicycling, public transportation, car sharing programs, and emerging technologies.

- **Policy 1.12 Sustainable Infrastructure.** Encourage the use of low or zero emission vehicles, bicycles, non-motorized vehicles, and car-sharing programs by supporting new and existing development that includes sustainable infrastructure and strategies such as vehicle charging stations, drop-off areas for ride-sharing services, secure bicycle parking, and transportation demand management programs.

- **Policy 3.3 Development Patterns.** Promote energy efficient-development patterns by clustering mixed use developments and compatible uses adjacent to public transportation.

- **Policy 3.11 Energy-Efficient Transportation Infrastructure.** Continue to support public and private infrastructure for public transportation such as bus routes, rail lines, and the OC Streetcar.

Open Space Element

- **Policy 1.4 Park Connectivity.** Establish and enhance options for residents to access existing and new park facilities through safe walking, bicycling, and transit routes.

- **Policy 1.5 Development Amenities.** Ensure all new development provides open space and effectively integrates pedestrian and multi-modal travelways to promote a quality living environment.

- **Policy 3.2 Linking Development.** Promote bicycle and pedestrian linkages and amenities throughout new and existing development to promote use of alternative modes of transportation and active lifestyles.

- **Policy 3.4 Greenway Corridors.** Coordinate with government and private sector to explore opportunities to incorporate pedestrian, multi-modal, and landscape amenities along the OC Streetcar route, flood control channels, and other underutilized sites.

Land Use Element

- **Policy 1.6 Transit Oriented Development.** Encourage residential mixed-use development, within the City's District Centers and Urban Neighborhoods, and adjacent to high quality transit.

- **Policy 1.7 Active Transportation Infrastructure.** Invest in active transportation connectivity between activity centers and residential neighborhoods to encourage healthy lifestyles.

- **Policy 2.5 Benefits of Mixed Use.** Encourage infill mixed-use development at all ranges of affordability to reduce vehicle miles travelled, improve jobs/housing balance, and promote social interaction.

- **Policy 3.6 Focused Development.** Facilitate the transformation of the transit corridors through focusing medium and high-density pedestrian-oriented mixed-use development at key intersections.

- **Policy 4.2 Public Realm.** Maintain and improve the public realm through quality architecture, street trees, landscaping, and other pedestrian-friendly amenities.
- **Policy 4.5 VMT Reduction.** Concentrate development along high-quality transit corridors to reduce vehicle miles traveled and transportation related carbon emissions.

5.16.4 Environmental Impacts

5.16.4.1 IMPACT ANALYSIS

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

Impact 5.16-1: The General Plan Update is consistent with adopted programs, plans, and policies addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. [Threshold T-1]

Roadways

The proposed circulation element is consistent with the planning goals established by OCTA in their LRTP, and the City worked with OCTA to ensure that local or regional improvements that benefit Santa Ana are included in the latest LRTP, adopted in 2017.

The proposed GPU circulation element includes reclassification of several arterial roadways, as shown in Figure 3-9, *Proposed Arterial Roadway Reclassifications*. The subject roadways are also listed in Section 3.3.2.2, *Updated Circulation Element*. These changes are proposed to the City's Master Plan of Street and Highway (see Figure 3-8) and would require an amendment to OCTA's Master Plan of Arterial Highways to achieve consistency with that plan. Consistency between the MPSH and MPAH is essential to maintain a functional regional network and to receive funding for Measure M street improvement projects.

The OCTA administers review and approval of the MPAH, and the City would work with OCTA to process an amendment to the MPAH to achieve consistency with the proposed City MPSH reclassifications. The MPAH includes level of service criteria for its roadway system. Although not a CEQA issue (per SB 743), the roadway segment LOS analysis in the TIA (Appendix K) includes the roadways in the MPAH. To achieve the minimum LOS for some roadway segments at GPU buildout, some improvements may be required. However, this is a planning issue and not a CEQA issue, since auto delay can no longer be considered a significant impact under CEQA.

Additionally, under the Complete Streets Act, general plans of California cities are required to include planning for complete streets—that is, streets that meet the needs of all users of the roadway, including pedestrians, bicyclists, users of public transit, motorists, children, the elderly, and the disabled. The proposed MPSH is consistent with the Complete Streets Act because the majority of the roadway reclassifications represent changes to narrower vehicle rights-of-way and reduced vehicle lanes to accommodate bikeway and/or sidewalk

improvements. The proposed GPU would also support and be consistent with the City's active transportation plan, the Central Santa Ana Complete Streets Plan, the Downtown Santa Ana Complete Streets Plan, and SCAG's RTP/SCS. The following analysis discusses future improvements for transit, bicycle, and pedestrian travel and how they relate to these adopted programs, plans, and policies. The proposed GPU's consistency with the 2020-2045 SCAG RTP/SCS is detailed in Section 5.10, *Land Use and Planning*.

Transit

Transit in the city consists of OCTA bus service, Southern California Regional Rail commuter and passenger rail service, and Amtrak passenger rail. Due to its central location, grid pattern, and high ridership potential, Santa Ana's role as a transit hub continues to increase.

The GPU incorporates policies related to supporting transit facilities in the plan area. These include prioritizing multimodal systems, supporting first/last mile connectivity to transit, implementing additional complete streets improvements when it fits the context of the community, and supporting the improvement of transit opportunity corridors. Policies that promote a transit system that serves as a functional alternative to commuting by car are:

- **Circulation Element**
  - Policy 1.2 Balanced Multimodal Network.
  - Policy 2.2 Transit Service.
  - Policy 2.4 Commuter Rail.
  - Policy 2.5 OC Streetcar.
  - Policy 2.6 Transit Corridors.
  - Policy 2.7 Regional Mobility Access.
  - Policy 3.4 Regional Coordination.
  - Policy 3.6 Transit Connectivity.
  - Policy 4.1 Intense Development Areas.
  - Policy 4.2 Project Review.
  - Policy 4.6 Roadway Capacity Alternatives.
- **Conservation Element**
  - Policy 1.6 New and Infill Residential Development.
  - Policy 1.9 Public Investment Alternative Transportation Infrastructure.
  - Policy 3.3 Development Patterns.
  - Policy 3.11 Energy-Efficient Transportation Infrastructure.
- **Open Space Element**
  - Policy 1.4 Park Connectivity.
  - Policy 1.5 Development Amenities.

- Policy 3.4 Greenway Corridors.

- **Land Use Element**
  - Policy 1.6 Transit Oriented Development.
  - Policy 3.6 Focused Development.
  - Policy 4.5 VMT Reduction.

The Master Plan of Transit, shown in Figure 3-10, *Master Plan of Transit*, represents the city's future transit system, including rail. Improvements planned for Santa Ana are described below.

OC Streetcar

Santa Ana is working with Garden Grove and OCTA to build a fixed guideway system called the OC Streetcar. Expected to begin operations in 2021, the OC Streetcar will link the Santa Ana Regional Transportation Center to a new multimodal hub at Harbor Boulevard/Westminster Avenue in Garden Grove. OC Streetcar will serve historic downtown Santa Ana and Civic Center. Along its four-mile route, OC Streetcar will connect with 18 OCTA bus routes and increase transportation options along Santa Ana Boulevard, 4th Street, the Pacific Electric right-of-way, and Harbor Boulevard.

Transit Opportunity Corridors

The OCTA has designated 10 transit opportunity corridors for major investments in higher-quality service such as rapid streetcar or bus rapid transit. Studies are underway along the Harbor corridor and should begin on Bristol by 2023. Six transit opportunity corridors cross Santa Ana:

- Harbor Boulevard from CSU Fullerton through Santa Ana
- State College Boulevard/Bristol Street from Brea Mall to UC Irvine
- Main Street from Anaheim Intermodal Center to South Coast Plaza
- 17th Street/Westminster Avenue from CSU Long Beach to Tustin Street
- I-5 from Fullerton Park-Ride to Laguna Niguel/Mission Viejo Station
- SR-55 from the Santa Ana Regional Transportation Center to Hoag Hospital Newport Beach

Regional Express Network

Recent planning efforts have focused on enhanced system management, including value pricing to better use existing capacity and to offer greater travel choices, particularly during times of traffic congestion. As part of the RTP/SCS, SCAG is proposing an extension of its regional Express/HOT Lane network. In Orange County, Express/HOT Lanes will be built along SR-55 and I-405 and will be accessible to users for a monthly or one-time toll. While these freeway improvements do not directly cross Santa Ana, the City supports these investments as they benefit the region and the city.

Bicycle Facilities

Future bicycle facilities are a mixture of Class I, Class II, Class III, and Class IV facilities. Future bicycle facilities are shown on Figure 5.16-4, *Master Plan of Bikeways*.

The GPU incorporates policies related to supporting bicycle facilities in the plan area. These include prioritizing multimodal systems, maintaining a network of complete streets to provide mobility opportunities for all users, implementing additional complete streets improvements when it fits the context of the community, developing and maintaining local and regional bicycle networks, and promoting bicycle safety when infrastructure improvements are made. Policies that promote a bicycle system that serves as a functional alternative to commuting by car are:

- **Circulation Element**
  - Policy 1.2 Balanced Multimodal Network.
  - Policy 1.6 Complete Streets.
  - Policy 3.1 Nonmotorized Travelway Network.
  - Policy 3.2 Nonmotorized Travelway Amenities.
  - Policy 3.5 Education and Encouragement.
  - Policy 3.7 Complete Streets Design.
  - Policy 4.1 Intense Development Areas.
  - Policy 4.2 Project Review.
  - Policy 4.6 Roadway Capacity Alternatives.
- **Urban Design Element**
  - Policy 1.5 Attractive Public Spaces.
  - Policy 1.6 Active Transportation Infrastructure.
  - Policy 3.3 Foster Community Building.
  - Policy 5.4 Intersections for all Travel Modes.
- **Community Element**
  - Policy 3.7 Active Lifestyles.
- **Conservation Element**
  - Policy 1.6 New and Infill Residential Development.
  - Policy 1.8 Promote Alternative Transportation.
  - Policy 1.9 Public Investment Alternative Transportation Infrastructure.
  - Policy 1.12 Sustainable Infrastructure.
- **Open Space Element**
  - Policy 1.4 Park Connectivity.
  - Policy 1.5 Development Amenities.

- Policy 3.2 Linking Development.
- Policy 3.4 Greenway Corridors.

- **Land Use Element**
  - Policy 1.7 Active Transportation Infrastructure.

Santa Ana is planning significant improvements to its bikeway network in an effort to improve opportunities for bicycling and walking. Some of the more notable projects are described below.

OC Loop

The Orange County (OC) Loop is a vision for 66 miles of bicycling and walking paths that travel from north and central Orange County to local beaches. Currently, the OC Loop contains 54 miles of trails along the San Gabriel River, Coyote Creek, Santa Ana River, and coastal/beach trails. Further use of trails in Santa Ana is constrained by law enforcement. The City is working with appropriate authorities to address safety concerns along Santiago Creek.

Safe Routes to School

The City is creating a citywide "Safe Routes to School" initiative for every school in Santa Ana. This initiative establishes safe routes to school, proposes specific capital improvements to the streetscapes to improve safety, and contains various programs for education and enforcement of existing traffic laws to improve pedestrian and bicycling safety. A Safe Routes to School plan is being developed to implement the circulation element.

Expanded Bicycle Lanes

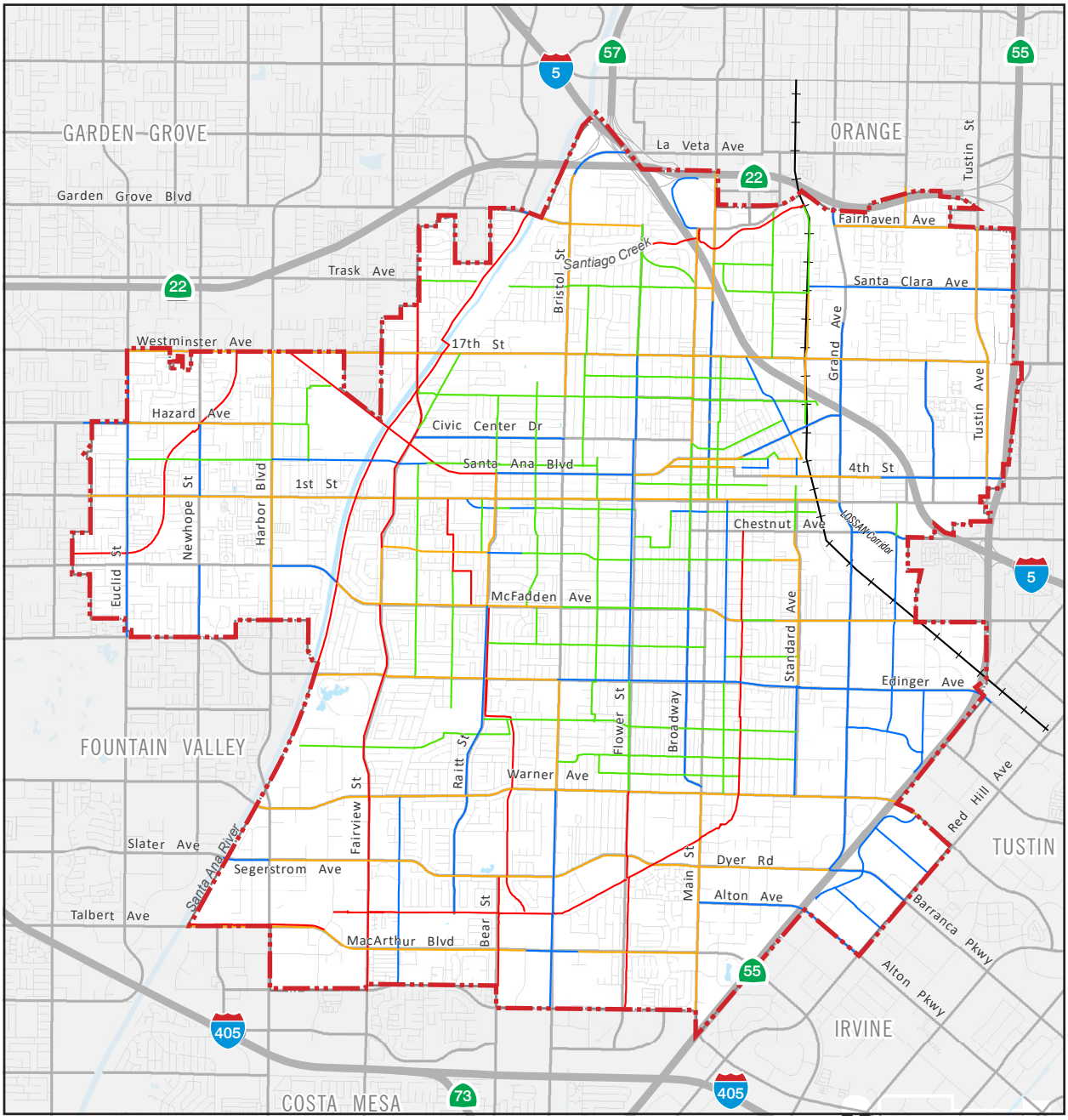
The City is aggressively expanding its existing bikeway network by adding Class 1, 2, 3, and 4 routes throughout the city. This effort is intended to implement the City's complete street policies and City Council directives to make Santa Ana a more bicycle- and pedestrian-friendly community.

Pedestrian

The circulation element includes potential pedestrian opportunity zones (see Figure 5.16-5, *Pedestrian Opportunity Zones*), areas that currently have high pedestrian activity and areas that have the potential for it once land use densities and/or street and pedestrian improvements are made.

The GPU incorporates policies related to supporting pedestrian traffic in the plan area. These include promoting the development of mixed-use, pedestrian-friendly areas clustered around activity centers; encouraging community interaction through the development and enhancement of plazas, open space, people places, and pedestrian connections with the public realm; and enhancing streets to facilitate safe walking through community participatory design. Policies that promote a bicycle and transit system that serves as a functional alternative to commuting by car are:

Figure 5.16-4 - Master Plan of Bikeways



- City of Santa Ana
- Class I Path
- Class II Bike Lane
- Class III Bike Route/Boulevard
- Class IV Cycle Track

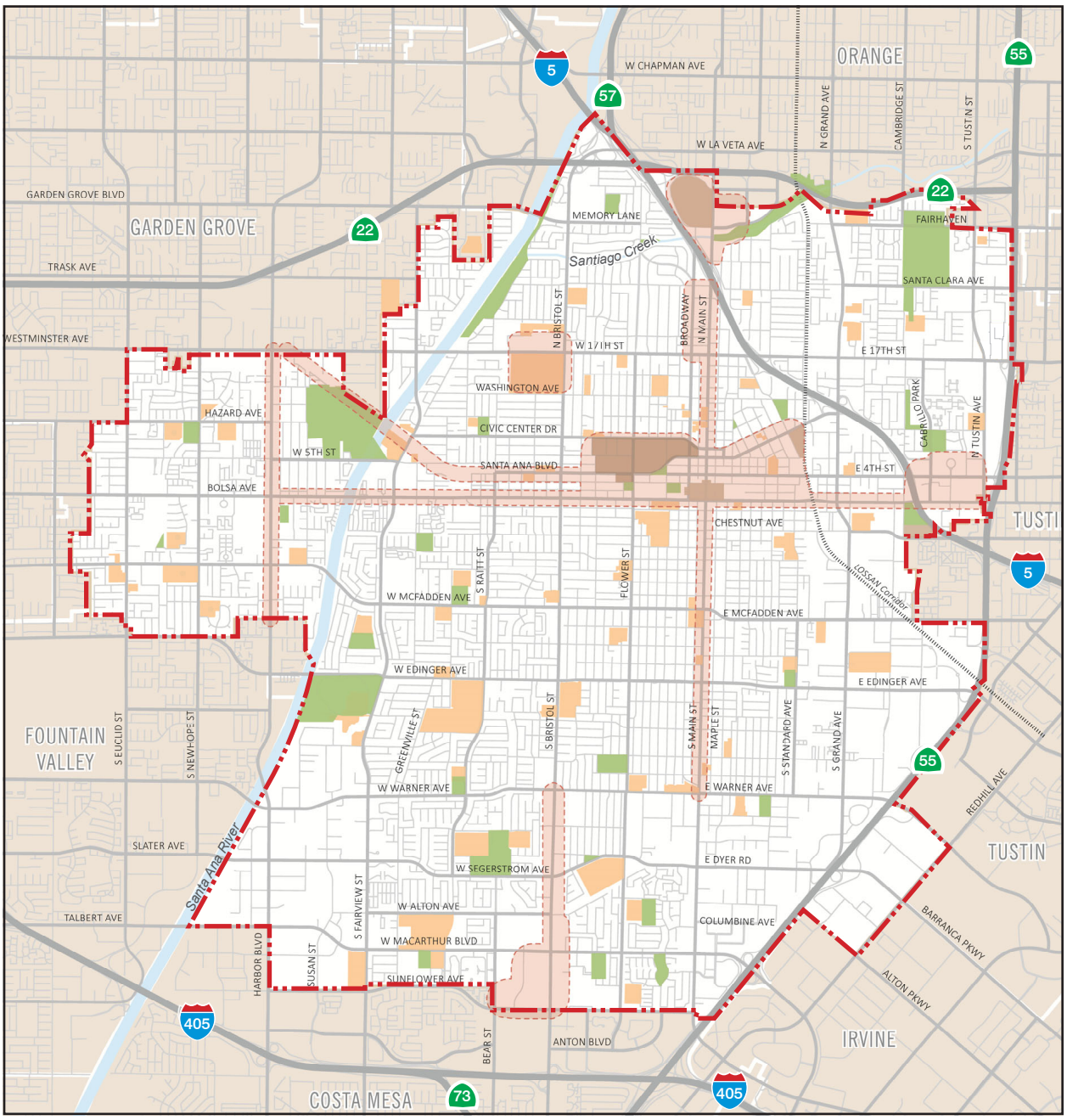
Source: City of Santa Ana, 2020

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Scale (Miles)

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Figure 5.16-5 - Pedestrian Opportunity Zones



City of Santa Ana

Pedestrian Opportunity Zone

Park/Open Space

Landmark

School

Source: City of Santa Ana, 2019

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Scale (Miles)

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- **Circulation Elements**
  - Policy 1.2 Balanced Multimodal Network.
  - Policy 1.6 Complete Streets.
  - Policy 3.1 Nonmotorized Travelway Network.
  - Policy 3.2 Nonmotorized Travelway Amenities.
  - Policy 3.5 Education and Encouragement.
  - Policy 3.7 Complete Streets Design.
  - Policy 4.1 Intense Development Areas.
  - Policy 4.2 Project Review.
  - Policy 4.6 Roadway Capacity Alternatives.
- **Urban Design Element**
  - Policy 1.5 Attractive Public Spaces.
  - Policy 1.6 Active Transportation Infrastructure.
  - Policy 3.3 Foster Community Building.
  - Policy 5.4 Intersections for all Travel Modes.
- **Community Element**
  - Policy 3.7 Active Lifestyles.
- **Conservation Element**
  - Policy 1.6 New and Infill Residential Development.
  - Policy 1.9 Public Investment Alternative Transportation Infrastructure.
  - Policy 1.12 Sustainable Infrastructure.
- **Open Space Element**
  - Policy 1.4 Park Connectivity.
  - Policy 1.5 Development Amenities.
  - Policy 3.2 Linking Development.
  - Policy 3.4 Greenway Corridors.
- **Land Use Element**
  - Policy 1.7 Active Transportation Infrastructure.
  - Policy 4.2 Public Realm.

Conclusion

In summary, implementation of the GPU will increase demand for public transit, bicycle, and pedestrian facilities, which will require the improvement and expansion of the circulation system. A review of the GPU revealed no potential policy inconsistencies or conflicts with policies, plans, or programs regarding public

transit, bicycle, or pedestrian facilities or the performance or safety of those facilities. The GPU incorporates future networks and policies related to supporting transit, bicycles, and pedestrians in the city. These networks are consistent with regional and local planning efforts supporting these modes of travel. Additionally, the GPU has numerous policies supporting complete streets (providing accessibility for all users of all ages and abilities) and active transportation.

Level of Significance Before Mitigation: With the implementation of RR T-1 and GPU policies, Impact 5.16-1 will be less than significant.

Impact 5.16-2: General Plan Update implementation would result in a reduction of vehicle miles traveled per service population (VMT/SP) in comparison to existing City conditions, and would achieve a VMT/SP at least 15 percent lower than the countywide VMT/SP. [Threshold T-2]

The VMT analysis for the proposed GPU was prepared in conformance with the City of Santa Ana VMT Analysis Guidelines for land use projects. VMT is defined as the total miles traveled by vehicles (within a transportation network). Service population is described as the population generating the VMT of interest. A VMT analysis may be conducted for large-scale projects such as land use plans or individual transportation/development projects. For large-scale projects, it is appropriate to assess VMT impacts based on total VMT/SP.

VMT was generated with data from OCTAM 5.0 accounting for VMT generated by all internal and external trips. These trip types refer to trips that include an origin and destination within the city (internal trips) and trips that include an origin or a destination in the city (external trips). VMT and VMT/SP was assessed for the existing year (2020) scenario, the Future Year (2045) No Project scenario, and the Future Year (2045) With Project scenario.

The Future Year (2045) No Project scenario was based on the existing 1998 circulation element and the current General Plan as amended. This scenario serves as the baseline for future year (2045) analysis and consists of the following key assumptions:

- Transportation network and socioeconomic data for OCTAM 5.0 Year 2045 Baseline scenario.
- Buildout of roadways consistent with the City of Santa Ana Master Plan MPSH as shown in the circulation element (1998).
- Buildout of the OCTA's MPAH.
- Freeway and transit improvements considered in the Preferred Alternative of OCTA's LRTP.
- Completion of the OC Streetcar.
- Completion of the Bus Rapid Transit improvements along Harbor Boulevard, Bristol Street, and Westminster Avenue/17th Street.
- Modification of mode split for automobile, bicycle, and pedestrians to reflect new bicycle/pedestrian trips.

The Future Year (2045) With Project (implementation of the GPU) scenario was based on the Future Year (2045) No Project scenario, with modifications to both the transportation network and socioeconomic data. Reclassifications to some roadways are proposed to facilitate the implementation of complete streets throughout the city, as described in Section 3.3.2.2, *Updated Circulation Element,* of Chapter 3, *Project Description,* and shown in Figure 3-9, *Proposed Arterial Roadway Reclassifications*. These reclassifications are considered in this scenario in addition to the proposed GPU land use buildout.

Table 5.16-3 shows that the projected city's VMT/SP upon buildout of the GPU in 2045 is 20.3, which is less than the defined threshold of 15 percent below existing county VMT/SP (22.0). The impact of the land use plan, therefore, would be less than significant.

Table 5.16-3 Projected VMT Summary – Land Use Plan

Metric	2045 – With Project City Total VMT	2045 – with project City Total Service Population	2045 – With Project City VMT/SP	2020 – No Project County VMT/SP	VMT Threshold 15% below 2020 – No Project County VMT/SP	Impact
VMT/SP	11,518,959	566,616	20.3	25.9	22.0	No

Source: IBI 2020.

Furthermore, the GPU includes policies that promote the reduction of VMT. Policy 2.5 of the land use element encourages infill mixed-use development at all ranges of affordability to reduce VMT, and Policy 4.5 aims to concentrate development along high-quality transit corridors. Policy 4.6 of the circulation element promotes reductions in automobile trips and VMT by encouraging transit use and nonmotorized transportation as alternatives to augmenting roadway capacity.

Level of Significance Before Mitigation: With the implementation of Land Use Policies 2.5 and 4.5 and Circulation Policy 4.6, Impact 5.16-2 will be less than significant.

Impact 5.16-3: Circulation improvements associated with future development that would be accommodated by the General Plan Update would be designed to adequately address potentially hazardous conditions (sharp curves, etc.), potential conflicting uses, and emergency access. [Thresholds T-3 and T-4]

Buildout of the GPU would involve the alteration, intensification, and redistribution of land uses in the city. The GPU includes circulation network improvements that would be subject to review and future consideration by the City's Public Works engineering staff. An evaluation of the roadway alignments, intersection geometrics, and traffic control features would be needed. Roadway improvements would have to be made in accordance with the City's circulation plan and roadway design guidelines and meet design guidelines of the California Manual of Uniform Traffic Control Devices. In addition, the circulation element includes policies to improve the safety of all users of the transportation system in the city—Policy 1.7 Proactive Mitigation, Policy 3.9 Neighborhood Traffic, Policy 5.7 Infrastructure Condition, and Policy 5.8 Traffic Safety (see Section 5.16.3). Implementation of the GPU would not result in hazardous conditions, create conflicting uses, or cause a detriment to emergency vehicle access.

Level of Significance Before Mitigation: With the implementation of RR T-2 and Circulation Policies 1.7, 3.9, 5.7, and 5.8, Impact 5.16-3 will be less than significant.

5.16.5 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.16-1, 5.16-2, and 5.16-3.

5.16.6 Mitigation Measures

No mitigation measures required.

5.16.7 Level of Significance After Mitigation

Impacts are less than significant.

5.16.8 References

California Department of Transportation (Caltrans). 2020. 2014 CA MUTCD. Revision 5. https://dot.ca.gov/programs/traffic-operations/camutcd/camutcd-rev5.

Santa Ana, City of. 2016a. Santa Ana Downtown Complete Streets Plan. https://www.santa-ana.org/pw/downtown-transit-zone-complete-streets-plan.

———. 2016b. Safe Mobility Santa Ana. https://www.santa-ana.org/smsa#:~:text=The%20plan%20utilizes%20a%20detailed,unanticipated%20mistakes%20without%20risk%20of.

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———. 2019a. June. Santa Ana Active Transportation Plan. https://www.santa-ana.org/sites/default/files/pw/documents/pw_201906_atp.pdf.

———. 2019b. Local Guidelines for Implementing the California Environmental Quality Act.

5.17 TRIBAL CULTURAL RESOURCES

This section of the Draft Program Environmental Impact Report (PEIR) evaluates the potential for implementation of the General Plan update for the City of Santa Ana to impact tribal cultural resources in the city and its sphere of influence (plan area). The analysis in this section is based in part on the following information:

- *Archaeological Technical Report for the City of Santa Ana General Plan Update*, SWCA Environmental Consultants, May 2020

A complete copy of this study is in the technical appendices of this Draft PEIR (Volume II, Appendix E-b). Native American consultation documentation is provided in Appendix L.

5.17.1 Environmental Setting

5.17.1.1 REGULATORY BACKGROUND

Federal

Archaeological Resources Protection Act

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

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 (25 US Code §§ 3001 et seq.) protects human remains, funerary objects, sacred objects, and items of cultural patrimony of indigenous peoples on federal lands. NAGPRA stipulates priorities for assigning ownership or control of such cultural items excavated or discovered on federal or tribal lands, or in the possession and control of an agency that has received federal funding.

NAGPRA also provides for the repatriation of human remains and associated items previously collected from federal lands and in the possession or control of a federal agency or federally funded repository. Implementing regulations are codified in 43 CFR (Code of Federal Regulations) Part 10. In addition to defining procedures for dealing with previously collected human remains and associated items, these regulations outline procedures for negotiating plans of action or comprehensive agreements for treatment of human remains and associated items encountered in intentional excavations, or inadvertent discoveries on federal or tribal lands.

National Historic Preservation Act of 1966

Enacted in 1966 and amended most recently in 2014, the National Historic Preservation Act (NHPA) instituted a multifaceted program administered by the Secretary of the Interior to encourage sound preservation policies of the nation's cultural resources at the federal, state, and local levels (54 US Code §§ 300101 et seq.). The NHPA authorized the expansion and maintenance of the National Register of Historic Places (NRHP),

established the position of State Historic Preservation Officer, and provided for the designation of State Review Boards. The NHPA also set up a mechanism to certify local governments to carry out the goals of the NHPA, assisted Native American tribes to preserve their cultural heritage, and created the Advisory Council on Historic Preservation (ACHP).

State

California Public Resources Code

Archaeological resources are protected pursuant to a wide variety of state policies and regulations enumerated under the California Public Resources Code (PRC). In addition, cultural resources are recognized as nonrenewable resources and therefore receive protection under the PRC and the California Environmental Quality Act (CEQA).

- **PRC Sections 5097.9 to 5097.991** provide protection to Native American historical and cultural resources and sacred sites and identify the powers and duties of the Native American Heritage Commission (NAHC). These sections also require notification to descendants of discoveries of Native American human remains and provide for treatment and disposition of human remains and associated grave goods.

California Health and Safety Code

The discovery of human remains is regulated by California Health and Safety Code Section 7050.5:

> In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation until the coroner has determined that the remains are not subject to…provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains. If the coroner determines that the remains are not subject to his or her authority and…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.

Senate Bill 18

Signed into law in 2004, Senate Bill (SB) 18 requires that cities and counties notify and consult with California Native American tribes about proposed local land use planning decisions for the purpose of protecting traditional tribal cultural sites. Cities and counties must provide general and specific plan amendment proposals to California Native American tribes that the California NAHC has identified as having traditional lands located within the city's boundaries. If requested by the Native American tribes, the city must also conduct consultations with the tribes prior to adopting or amending their general and specific plans.

Assembly Bill 52

The Native American Historic Resource Protection Act (AB 52) took effect July 1, 2015, and incorporates tribal consultation and analysis of impacts to tribal cultural resources (TCR) into the CEQA process. It requires TCRs to be analyzed like any other CEQA topic and establishes a consultation process for lead agencies and California tribes. Projects that require a Notice of Preparation of an EIR or Notice of Intent to adopt a ND or MND on or after July 1, 2015, are subject to AB 52. A significant impact on a TCR is considered a significant environmental impact, requiring feasible mitigation measures.

TCRs must have certain characteristics:

1. Sites, features, places, cultural landscapes (must be geographically defined), sacred places, and objects with cultural value to a California Native American tribe that are either included or determined to be eligible for inclusion in the California Register of Historic Resources or included in a local register of historical resources. (PRC § 21074(a)(1))

2. The lead agency, supported by substantial evidence, chooses to treat the resource as a TCR. (PRC § 21074(a)(2))

The first category requires that the TCR qualify as a historical resource according to PRC Section 5024.1. The second category gives the lead agency discretion to qualify that resource—under the conditions that it supports its determination with substantial evidence and considers the resource's significance to a California tribe. The following is a brief outline of the process (PRC §§ 21080.3.1 to 3.3).

1. A California Native American tribe asks agencies in the geographic area with which it is traditionally and culturally affiliated to be notified about projects. Tribes must ask in writing.

2. Within 14 days of deciding to undertake a project or determining that a project application is complete, the lead agency must provide formal written notification to all tribes who have requested it.

3. A tribe must respond within 30 days of receiving the notification if it wishes to engage in consultation.

4. The lead agency must initiate consultation within 30 days of receiving the request from the tribe.

5. Consultation concludes when both parties have agreed on measures to mitigate or avoid a significant effect to a TCR, OR a party, after a reasonable effort in good faith, decides that mutual agreement cannot be reached.

6. Regardless of the outcome of consultation, the CEQA document must disclose significant impacts on TCRs and discuss feasible alternatives or mitigation that avoid or lessen the impact.

Regional

Southern California Association of Governments

The Southern California Association of Governments Growth Management Chapter (SCAGGMC) has instituted policies regarding the protection of cultural resources. SCAGGMC Policy No. 3.21 "encourages the implementation of measures aimed at the preservation and protection of recorded and unrecorded cultural resources and archaeological sites" (SCAG 2001).

5.17.1.2 EXISTING CONDITIONS

Ethnographic Setting

According to available ethnographic maps, the City of Santa Ana falls within the traditional territory of the Gabrielino. The name Gabrielino (sometimes spelled Gabrieleno or Gabrieleño) denotes the people who were administered by the Spanish from Mission San Gabriel. By the same token, Native Americans in the sphere of influence of Mission San Fernando were historically referred to as Fernandeño. This group is now considered to be a regional dialect of the Gabrielino language, along with the Santa Catalina Island and San Nicolas Island dialects. In the post-Contact period, Mission San Gabriel included natives of the greater Los Angeles area as well as members of surrounding groups such as Kitanemuk, Serrano, and Cahuilla. There is little evidence that the people we call Gabrielino had a broad term for their group; rather, they identified themselves as an inhabitant of a specific community through the use of locational suffixes. Native words that have been suggested as labels for the broader group of Native Americans in the Los Angeles region include Tongva and Kizh, although there is evidence that these terms originally referred to local places or smaller groups of people within the larger group that we now call Gabrielino. The term Gabrielino, which combines the most commonly used group names, is used in the remainder of this study to designate native people of the Los Angeles Basin and their descendants (SWCA 2020).

Gabrielino lands encompassed the greater Los Angeles Basin and three Channel Islands: San Clemente, San Nicolas, and Santa Catalina. Their mainland territory was bounded on the north by the Chumash at Topanga Creek, the Serrano at the San Gabriel Mountains in the east, and the Juaneño on the south at Aliso Creek. The Gabrielino language, as well as that of the neighboring Juaneño/Luiseño, Tatataviam/Alliklik, and Serrano, belongs to the Takic branch of the Uto-Aztecan language family, which can be traced to the Great Basin area. The Gabrielino language consisted of two main dialects: Eastern and Western. The Western included much of the coast and the Channel Island population, and lands of the Western group encompassed much of the western Los Angeles Basin and San Fernando Valley, northward along the coast to the Palos Verdes Peninsula (SWCA 2020).

The Gabrielino established large, permanent villages in the fertile lowlands along rivers and streams and in sheltered areas along the coast, from the foothills of the San Gabriel Mountains to the Pacific Ocean. A total tribal population of at least 5,000 has been estimated, but recent ethnohistoric work suggests that a number approaching 10,000 seems more likely. Several Gabrielino villages appear to have served as trade centers, due in large part to their centralized geographic position in relation to the southern Channel Islands and to other

tribes. These villages maintained particularly large populations and hosted annual trade fairs that would bring their population to 1,000 or more for the duration of the event (SWCA 2020).

The Gabrielino subsistence economy was centered on gathering and hunting. The surrounding environment was rich and varied, and the tribe exploited mountains, foothills, valleys, and deserts as well as riparian, estuarine, and open and rocky coastal eco-niches. A wide variety of tools and implements was employed by the Gabrielino to gather and collect food. Groups residing near the ocean used ocean-going plank canoes and tule balsa canoes for fishing, travel, and trade between the mainland and the Channel Islands (SWCA 2020).

Deceased Gabrielino were either buried or cremated, with inhumation reportedly being more common on the Channel Islands and the neighboring mainland coast, and cremation predominating on the remainder of the coast and in the interior. Remains were buried in distinct burial areas, either associated with villages or without apparent village association. Cremation ashes have been found in archaeological contexts buried within stone bowls and in shell dishes, as well as scattered among broken ground stone implements. Archaeological data such as these correspond with ethnographic descriptions of an elaborate mourning ceremony that included a wide variety of offerings. At the behest of the Spanish missionaries, cremation essentially ceased during the post-Contact period. For inhumations, the deceased was wrapped in a covering, bound head to foot, with hands crooked upon their breast. Archaeological examples of human remains in the Gabrielino region dating to the Late Prehistoric and protohistoric periods are dominated by flexed or extended inhumations, with a smaller number of cremations. Grave goods associated with burials/cremations varied in quantity and content and included projectile points, beads, steatite objects, and asphaltum (SWCA 2020).

A review of a number of historic and ethnographic maps was conducted to further identify the archaeological sensitivity of the General Plan update area. An ethnographic map showing Native American settlements used for the recruitment of neophytes to the San Fernando and San Gabriel Missions shows that the plan area included the village of Pajebet (see Figure 4 of Archeological Technical Report in Appendix E-b). A review of the pictorial and historical map of Orange County does not depict any Native American villages in the plan area, but a village is noted both to the northeast and southwest along the Santa Ana River (see Figure 5 of Archeological Technical Report). The Santa Ana River was known as Wanaawna by the Gabrielino, and the settlement of Pasbengna was recorded as being along the Santa Ana River in the vicinity of Santa Ana. It is likely that the village of Pajebet (Figure 4 of Archeological Technical Report) was in actuality Pasbengna, and Pasbengna is the unnamed village marked to the north of the plan area on the pictorial and historical map of Orange County (Figure 5 of Archeological Technical Report). The village mapped to the south of the plan area may be the village of Lukúpa, which was situated on a knoll in the region over the Santa Ana River floodplain (SWCA 2020).

Lukúpa is believed to be the Newland House Site, which was excavated in the 1930s. The Camino (Nuevo) Real is also mapped by the pictorial and historical map of Orange County (see Figure 5 of Archeological Technical Report) as transecting the plan area, and the town of "Oranga" is mapped at the northern border (SWCA 2020).

Tribal Cultural Resources

A records search of the California Historical Resources Information System found 23 archaeological resources that were previously recorded within 0.5 mile of the plan area. Of these resources, 8 were in the plan area, including 4 prehistoric sites, 1 multicomponent site, and 3 historic isolates. The prehistoric sites include habitation debris and lithic scatters, described following.

- A site recorded in 1971 (CA-ORA-300), when the construction of an apartment complex unearthed five prehistoric burials, a prehistoric midden deposit, and some historic materials associated with a historical walnut grove and a historic residence.
- Another site recorded in 1971 (CA-ORA-301) with subsurface lithic deposit, up to six feet below the surface.
- A site recorded in 1972 (CA-ORA-353) with prehistoric lithic scatter. The site is in an area partially developed for housing.
- A site recorded in 1973 (CA-ORA-392) after the development of a housing project uncovered shell midden visible on the surface around the existing homes. The record notes that lithic artifacts were recovered by the local residents.

None of these sites have been updated since their initial recordation, and it is possible that intact subsurface deposits are still present within the site boundaries. The area surrounding CA-ORA-300 and 353 should be considered particularly sensitive due to the previous discovery of Native American burials. A site was recorded in 1999 (CA-ORA-1514) and consisted of a prehistoric shell scatter with no other associated artifacts. The site was noted to be a disturbed surface scatter in an open lot with buildings in the surrounding area, and no determination of a subsurface component. It is possible that intact subsurface deposits are still present within the site boundary.

Although the review of ethnographic and historic maps does not indicate the presence of any specific Native American archaeological resources, the proximity of mapped locations of these settlements in the vicinity of the plan area indicates a high sensitivity. The presence of the Santa Ana River, a permanent water source that connects the closest mapped Native American villages, and numerous springs mapped throughout the area on the rancho plat maps indicate that there is likely a high sensitivity for Native American archaeological resources throughout the plan area. This is supported by the identification of several prehistoric sites composed of habitation debris and lithic materials.

Sacred Lands File Search

Tribal cultural resources can include archaeological sites, built environment resources, locations of events or ceremonies, resource procurement areas, and natural landscape features with special significance to one or more indigenous groups. SWCA requested a Sacred Lands File (SLF) Search from the NAHC on February 22, 2019, and received the results on March 1, 2019. The SLF returned positive results, indicating that known tribal resources are located in the plan area.

5.17.2 Thresholds of Significance

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

TCR-1 Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

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

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

5.17.3 Regulatory Requirements and General Plan Policies

5.17.3.1 REGULATORY REQUIREMENTS

RR TRC-1 As per AB52, within 14 days of deciding to undertake a project or determining that a project application is complete, the lead agency must provide formal written notification to all tribes who have requested it.

RR CUL-1 California Health and Safety Code Section 7050.5 requires that if human remains are discovered within the proposed project site, disturbance of the site shall halt and remain halted until the coroner has investigated the circumstances, manner, and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes or has reason to believe the human remains to be those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission.

5.17.3.2 GENERAL PLAN UPDATE POLICIES

The following are relevant policies of the Santa Ana General Plan update, which may contribute to reduce potential impacts to tribal cultural resources as a result of implementation of the proposed project.

Historic Preservation Element

- **Policy 1.4 Protecting Resources.** Support land use plans and development proposals that actively protect historic and cultural resources.
- **Policy 1.7 Preserving Human Element.** Encourage participation in oral history programs to capture Santa Ana's historic and cultural narrative.
- **Policy 2.1 Resource Stewardship.** Expand community outreach to educate property owners and businesses regarding responsibilities and stewardship requirements of the City's historic resources.
- **Policy 2.2 Educational Awareness.** Provide educational opportunities to foster community awareness and pride in Santa Ana's history.
- **Policy 2.3 Commemorating History.** Support efforts to identify and commemorate historic structures and sites in Santa Ana through murals, plaques, and educational exhibits.
- **Policy 2.4 Local and Regional Partnerships.** Strengthen relationships and programs with local and regional institutions to promote the appreciation, maintenance, rehabilitation, and preservation of Santa Ana's historic and cultural resources.
- **Policy 2.5 Economic Development Tool.** Promote economic development through heritage education and the promotion of tourism.
- **Policy 3.1 Historic Resource Survey.** Maintain a comprehensive program to inventory and preserve historic and cultural resources.
- **Policy 3.3 Accessible Preservation Program.** Explore strategies to promote a historic preservation program that is robust, equitable, and accessible.
- **Policy 3.4 Preservation Program Certification.** Maintain Santa Ana's status as a Certified Local Government (CLG) to further the City's historic resource program and pursue all available funding for preservation.
- **Policy 3.5 Local Preservation Groups.** Collaborate with the Santa Ana Historical Preservation Society, community groups, and individuals to promote public awareness and educational opportunities that highlight historic preservation.
- **Policy 3.6 Staff Development.** Collaborate with local and regional historic preservation groups to maintain a training program that promotes best practices in preservation techniques.

5.17.4 Environmental Impacts

5.17.4.1 METHODOLOGY

Literature Review and Database Searches

Available literature, historic topographic maps, historic aerial photographs, and records and database searches containing information on archaeological and tribal cultural resources were reviewed. Data sources include the California Historical Resources Information System (CHRIS), California state databases, and map searches encompassing the plan area to provide regional context and ensure thorough review of potential archaeological and tribal cultural resources within the plan area.

The California Office of Historic Preservation's system for managing information on archaeological and historic built environment resources and previous studies is known as the CHRIS. The CHRIS records are administered through various Archaeological Information Centers responsible for one or more counties. Records for Orange County are managed through the South-Central Coastal Information Center (SCCIC), located on the campus of California State University, Fullerton. On February 19, 2019, SWCA Environmental Consultants archaeologist Amber Johnson, B.A., conducted a records search of the CHRIS at the SCCIC. The search included any previously recorded archaeological resources within a 0.5-mile radius of the General Plan area. Historic built resources, or buildings, structures, and objects that are 45 years or older, were not included in the records search, as they are being addressed in a separate technical report.

In addition to the CHRIS records search, SWCA conducted a review of all available historic U.S. Geological Survey 7.5- and 15-minute quadrangle maps depicting the City of Santa Ana. SWCA also reviewed property-specific historical and ethnographic context research to identify information relevant to the plan area. Archival research focused on a variety of primary and secondary materials relating to the history and development of the City of Santa Ana. Some of the sources consulted included historical maps, aerial and ground photographs, building permits, ethnographic reports, soil reports, and other environmental data.

On February 22, 2019, SWCA requested a search of the Sacred Lands File (SLF) from the NAHC. On March 1, 2019, the NAHC provided the results of the SLF search, as well as a consultation list of tribal governments with traditional lands or cultural places located within the plan area. To assist with formal government-to-government consultation with NAHC-listed tribes pursuant to SB 18 and AB 52, this list was provided to the City.

Tribal Consultation

Conducting tribal consultation early in the CEQA process allows tribal governments and public lead agencies to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. The intent of the tribal consultation process is to provide an opportunity for interested Native American contacts to work together with the City during the project planning process to identify and protect tribal cultural resources.

Native American consultation letters pursuant to AB 52 and SB 18 were sent to 19 Native American contacts on March 10, 2020. The letter formally invited tribes to consult with the City on the General Plan Update. Letters were sent to the following tribes:

- Campo Band of Diegueno Mission Indians
- Ewiiaapaayp Band of Kumeyaay Indians (letters sent to two Native American contacts)
- Gabrieleño Band of Mission Indians – Kizh Nation
- Gabrieleno/Tongva San Gabriel Band of Mission Indians
- Gabrielino /Tongva Nation
- Gabrielino Tongva Indians of California Tribal Council
- Gabrielino Tongva Tribe
- Jamul Indian Village (letters sent to two Native American contacts)
- Juaneño Band of Mission Indians Acjachemen Nation – Belardes
- La Posta Band of Diegueno Mission Indians (letters sent to two Native American contacts)
- Manzanita Band of Kumeyaay Nation
- Mesa Grande Band of Diegueno Mission Indians
- San Fernando Band of Mission Indians
- San Pasqual Band of Diegueno Mission Indians
- Sycuan Band of the Kumeyaay Nation
- Viejas Band of Kumeyaay Indians

Consultation requests were received from two Native American tribes: (1) Gabrieleño Band of Mission Indians – Kizh Nation, dated March 20, 2020, and (2) Juaneño Band of Mission Indians Acjachemen Nation – Belardes, dated March 19, 2020. Consultation with the Gabrieleño Band of Mission Indians – Kizh Nation occurred on June 4, 2020. An email dated April 10, 2020, from the Juaneño Band of Mission Indians Acjachemen Nation – Belardes states that they do not feel the need to meet at this time, but would like to consult as the project moves forward. They state their interest in reviewing the Draft PEIR and potential impacts on tribal cultural resources and will share concerns following their review of the Draft PEIR.

5.17.4.2 IMPACT ANALYSIS

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

Impact 5.17-1: The proposed project could cause a substantial adverse change in the significance of a tribal cultural resource 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). [Threshold TCR-1.i]

The SLF search yielded positive results indicating that known tribal resources exist within the plan area. Further, a CHRIS records search at SCCIC indicates that 23 archaeological resources were previously recorded within

0.5 mile of the plan area. Of these resources, eight archaeological resources were located within the plan area; these include four prehistoric sites with habitation debris and lithic scatters, one multicomponent site, and three historic isolates (SWCA 2020). The plan area includes many locations that would have been favorable for prehistoric Native American occupation. While the City is urbanized and most of the plan area has been developed, buried resources may remain in areas of minimal ground disturbance, such as parks, parking lots, and structures with shallow foundations. Similar to archaeological resources discussed in Section 5.4, *Cultural Resources*, tribal cultural resources are site-specific in nature. Future development allowed under the General Plan Update could potentially impact and cause significant adverse impacts to tribal cultural resources. Therefore, implementation of the General Plan Update could result in a potentially significant impact.

Level of Significance Before Mitigation: Even with the implementation of RR CUL-1 and policies identified under the Historic Preservation Element, Impact 5.17-1 would be potentially significant.

Impact 5.17-2: The proposed project could cause a substantial adverse change in the significance of a tribal cultural resource that is determined by the lead agency to be significant pursuant to criteria in Public Resources Code Section 5024.1(c). [Threshold TCR-1.ii]

In considering the significance of the resource to a California Native American tribe, the NAHC was contacted for the listing of tribes with traditional lands or cultural places within the plan area boundaries and to search the SLF. The SLF returned positive results, indicating that known tribal resources are located within the General Plan Update area.

As described in Section 5.17.4.1, *Methodology,* the City contacted 19 Native American representatives on March 10, 2020, and two consultation requests were received from (1) Gabrieleño Band of Mission Indians – Kizh Nation and (2) Juaneño Band of Mission Indians Acjachemen Nation – Belardes.

Consultation with the Gabrieleño Band of Mission Indians – Kizh Nation occurred June 4, 2020. Gabrieleño Band of Mission Indians – Kizh Nation identified sensitive areas within the City that have tribal resources. Gabrieleño Band of Mission Indians – Kizh Nation have requested to consult during the development process where grounds near sacred cultural resources, landscape features, or ceremonial sites may exist.

As discussed under Section 5.17.4.1, *Methodology*, an email dated April 10, 2020, from the Juaneño Band of Mission Indians Acjachemen Nation – Belardes states that they do not feel the need to meet at this time, but would like to consult as the project moves forward.

Future development as a result of the implementation of the General Plan Update could include grading in portions of the City with sensitivity to tribal cultural resources. Grading and construction activities that requires more intensive soil excavation than in the past could potentially cause disturbance to tribal cultural resources. Future development could potentially unearth previously unknown or unrecorded tribal cultural resources.

The General Plan Update includes policies that have the potential to reduce impacts of potential development on tribal cultural resources, such as:

- **Policy 1.4 Protecting Resources.** Support land use plans and development proposals that actively protect historic and cultural resources.

- **Policy 1.7 Preserving Human Element.** Encourage participation in oral history programs to capture Santa Ana's historic and cultural narrative.

Provided that the NAHC SLF search yielded positive results and the Gabrieleño Band of Mission Indians – Kizh Nation identified sensitive areas within the City, the buildout of the General Plan Update may cause a substantial adverse change in the significance of tribal cultural resources. Earthwork activities may occur with buildout under the General Plan Update, which could impact previously undisturbed tribal cultural resources. Therefore, impacts to tribal cultural resources are considered potentially significant.

Level of Significance Before Mitigation: Even with the implementation of RR TCR-1 and policies identified under the Historic Preservation Element, Impact 5.17-2 would be potentially significant.

5.17.5 Level of Significance Before Mitigation

Without mitigation, the following impacts would be **potentially significant:**

- **Impact 5.17-1** Buildout consistent with the General Plan Update could adversely impact tribal cultural resources that are listed in a register.

- **Impact 5.17-2** Buildout consistent with the General Plan Update could adversely impact tribal cultural resources pursuant to criteria in Public Resources Code Section 5024.1(c).

5.17.6 Mitigation Measures

Impact 5.17-1 and Impact 5.17-2

Refer to Mitigation Measures CUL-4 through CUL-7 outlined in Chapter 5.4, *Cultural Resources*.

5.17.7 Level of Significance After Mitigation

Impact 5.17-1 and Impact 5.17-2

Implementation of Mitigation Measures CUL-4 through CUL-7 would reduce impacts relating to tribal cultural resources to less than significant.

5.17.8 References

Southern California Association of Governments. 2001. SCAG Growth Management Chapter (GMC) Policy No. 3.21. Los Angeles, CA.

SWCA Environmental Consultants (SWCA). 2020, May. Archaeological Technical Report for the City of Santa Ana General Plan Update.

5.18 UTILITIES AND SERVICE SYSTEMS

This section of the Draft Program Environmental Impact Report (PEIR) evaluates the potential impacts of the Santa Ana General Plan Update (GPU) to utility and service systems in the City of Santa Ana and its sphere of influence (plan area). The section addresses wastewater treatment and collection, water supply and distribution, storm drainage, solid waste, and electricity and natural gas services.

The analysis in this section is based in part on the following technical reports:

- *City of Santa Ana General Plan Update Infrastructure Technical Report for Hydrology, Sewer, Water, and Water Quality,* Fuscoe, June 3, 2020.
- *City of Santa Ana General Plan Update Water Supply & Demand Technical Report*, Fuscoe, May 29, 2020.

A complete copy of these reports are included in the Technical Appendices to this Draft PEIR (Volume II, Appendices H-a and H-b).

5.18.1 Wastewater Treatment and Collection

5.18.1.1 ENVIRONMENTAL SETTING

Regulatory Background

Federal

Clean Water Act

The Clean Water Act (CWA) establishes regulations to control the discharge of pollutants into the waters of the United States and regulates water quality standards for surface waters. Under the CWA, the U.S. Environment Protection Agency (EPA) is authorized to set wastewater standards and runs the National Pollutant Discharge Elimination System (NPDES) permit program. Under the NPDES program, permits are required for all new developments that generate discharges that go directly into waters of the United States. The federal CWA, United States Code, Title 33, Sections 1251 et seq. requires wastewater treatment of all effluent before it is discharged into surface waters.

State

State Water Resources Control Board: Statewide General Waste Discharge Requirements

The General Waste Discharge Requirements specify that all federal and state agencies, municipalities, counties, districts, and other public entities that own or operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility in the State of California need to develop a Sewer Master Plan. The plan evaluates existing sewer collection systems and provides a framework for undertaking the construction of new and replacement facilities to maintain proper levels of service. The master plan includes inflow and infiltration studies to analyze flow monitoring and water use data, a capacity assurance plan to analyze the existing system with existing land use and unit flow

factors, a condition assessment and sewer system rehabilitation plan, and a financial plan with recommended capital improvements and financial models.

General Pretreatment Regulations for Existing and New Sources of Pollution

The General Pretreatment Regulations establish responsibilities of the federal, state, and local government; industry; and the public to implement National Pretreatment Standards to control pollutants that pass through or interfere with treatment processes in Publicly Owned Treatment Works (POTW) or that may contaminate sewage sludge. Pretreatment standards are pollutant discharge limits that apply to industrial users.

Regional

Orange County Sanitary District Reclamation Plants NPDES Permit

Wastewater discharge requirements for Orange County Sanitary District (OCSD) Reclamation Plants No. 1 and No. 2 are detailed in Order No. R8-2012-0035 issued in 2012. The permit includes the conditions needed to meet minimum applicable technology-based requirements. The permit includes limitations more stringent than applicable federal technology-based requirements where necessary to achieve the required water quality standards.

Orange County Sanitation District Capital Facilities Charges

The OCSD Capital Facilities Charge (Ordinance No. OCSD-40) is imposed when a property newly connects to the OCSD system or a previously connected property expands its use. Revenue generated from the charge is used for the acquisition, construction, and reconstruction of OCSD's wastewater collection, treatment, and disposal facilities; to repay principal and interest on debt instruments; or to repay federal or state loans for the construction and reconstruction of sewage facilities, together with costs of administration and provisions for necessary reserves.

Orange County Sanitation District Ordinance Nos. 25 and 48

OCSD Ordinance OCSD-25 sets forth some prohibitions on activities by food service establishments to minimize discharges of fat, oils, and grease to sewers.

OCSD Ordinance OCSD-48 sets limits on wastewater that is discharged to sewers and conveyed to OCSD wastewater treatment plants. The ordinance limits concentrations of certain substances, including metals, some hazardous materials such as pesticides, and oil and grease (petroleum derived).

Local

City of Santa Ana Design Guidelines for Water and Sewer Facilities

The purpose of the Santa Ana Design Guidelines for Water and Sewer Facilities is to provide applicants (developer/builder) with a general understanding of the design criteria for the City of Santa Ana water and sewer facilities for new development or re-development projects.

City of Santa Ana 2016 Sewer Master Plan

The City's most recent Sewer Master Plan update was performed in December 2016. The 2016 Sewer Master Plan Update Final Report (SMP) was an update to a sewer capacity analysis performed in 2003. The 2016 SMP analyzed the age of the sewer infrastructure, and the capacity of the City's sewer collection system for existing and future peak-flow conditions under both dry and wet weather conditions. In addition, the 2016 SMP summarized the rankings of the condition of the sewer pipes/manholes and the recommended rehabilitation and replacement of these sewers.

Santa Ana Municipal Code

Chapter 8 - Article III (Plumbing Code): This article of the Santa Ana Municipal Code incorporates the 2016 California Plumbing Code by reference.

Chapter 39 - Article III (Sewers): Requires all buildings or other structures that contain any plumbing fixtures and are located within any sewer district or district serviced by a public sewer be connected to a public sewer. The article also requires issuance of a permit before any sewer connection can be made. All connection fees collected are deposited into the sewer connection fee fund. Building permits are reviewed by the director of public works for the purpose of determining whether the proposed development would result in an overload of existing sewer line capacity. This article also prohibits the discharge of fat, oils, and greases into public sewer lines and details fat, oil, and grease best management practices (BMPs). The sewerage service fee is also detailed in this article.

Existing Conditions

Wastewater Collection System

The City operates and maintains Santa Ana's sewer system, which serves the entire plan area and portions of Garden Grove and Orange. The City's sewer collection system consists of approximately 450 miles of sewer mains, including approximately 60 miles of OCSD regional trunk facilities within the city. The system operates largely by gravity and discharges at several locations into OCSD gravity trunk sewers for conveyance to OCSD Treatment Plant 1.

The sewer system is divided into minor sewers (6 to -8 inches in diameter) serving an area no greater than 25 miles and major sewers that are larger sewer systems that convey greater than 25 miles of sewer discharges. See Table 5.18-1 for a summary of sewer facilities within the focus areas. Figure 5.18-1, *Existing Sewer Facilities,* illustrates the existing City and OCSD sewer infrastructure in the plan area.

Table 5.18-1 Existing Sewer Facilities within the Focus Areas

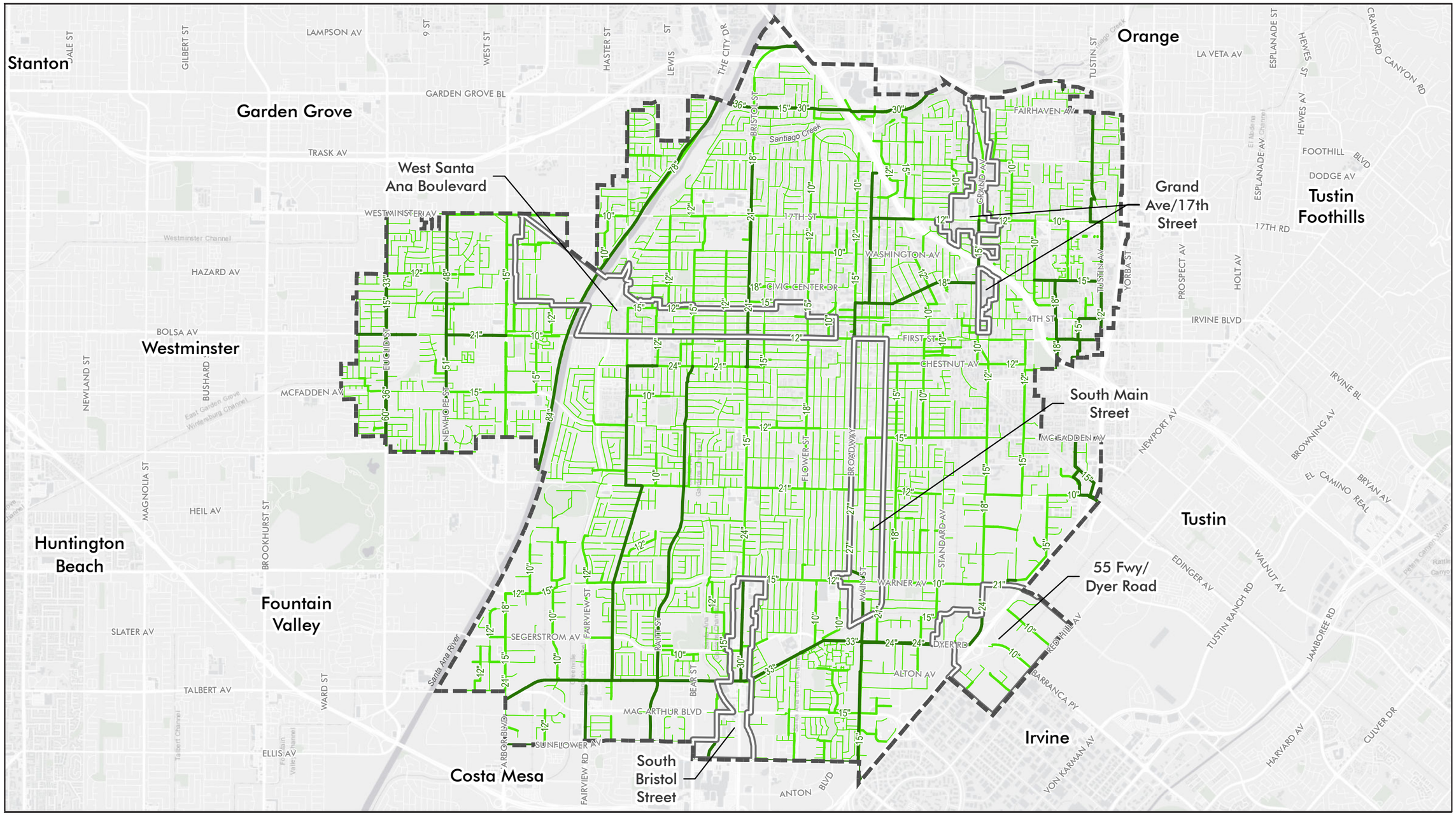
Focus Area	Primary Sewer System Facilities
West Santa Ana Boulevard	10"-15" City Lines 21" OCSD Trunk Line
Grand Avenue/17th Street	8"-12" City Lines 15" OCSD Trunk Line
South Main Street	8"-15" City Lines 21"-27" OCSD Trunk Line
South Bristol Street	8"-15" City Lines 30"-33" OCSD Trunk Line
55 Freeway/Dyer Road	8"-10" City Lines 21"-24" OCSD Trunk Line

Source: Fuscoe 2020a.

Existing Sewer Flows

For each land use in the City of Santa Ana and the five focus areas, a total sewer generation was estimated to provide a baseline condition and to allow for comparison against proposed land use changes. Acreages of the existing development (i.e., residential and non-residential) were used along with their corresponding flow/generation factors to develop existing condition flow rates. Commercial sewer generation factors were provided from the OCSD Design and Construction Standards for Sanitary Sewers (2016). Residential sewer generation factors were derived from the Municipal Water District of Orange County (MWDOC) Orange County Water Reliability Study (MWDOC 2016) water flow factors for single-family and multifamily residences for 2015 multiplied by a 0.95 sewer factor as indoor water flows and sewer flows are similar. This sewer factor per land use is the recommended approach by sewer agencies to determine any impacts to sewer infrastructure at a level consistent with a general plan update. The generation factors are typically conservative in nature and tend to over-represent sewer flows to incorporate a safety factor into pipe network design and hydraulic capacity assessments.

Figure 5.18-1 - Existing Sewer Facilities



Source: FUSCOE Engineering, 2020

5. Environmental Analysis
UTILITIES AND SERVICE SYSTEMS

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Table 5.18-2, *Existing Average Sewer Flows,* provides a summary of the existing wastewater flows for the City and focus areas. Refer to the Infrastructure Technical Report for Hydrology, Sewer, Water, and Water Quality in Volume II, H-a of this Draft PEIR for detailed sewer flow calculations.

Table 5.18-2 Existing Average Daily Sewer Flows

Area	Number of Dwelling Units	Non-Residential Square Footage	Average Sewer Flows (gpd)
Focus Area			
West Santa Ana Boulevard	2,658	3,090,472	827,553
Grand Avenue/17th Street	220	1,577,511	125,918
South Main Street	561	1,400,741	188,358
South Bristol Street	1,720	1,685,978	565,500
55 Freeway/Dyer Road	1,221	5,666,453	538,450
Focus Area Total	**6,380**	**13,421,155**	**2,245,779**
Remainder of City			
All Other Areas of City	72,412	53,697,441	27,786,561
Citywide Total	**78,792**	**67,118,596**	**30,032,340**

Source: Fuscoe 2020a.
Notes:
See Appendix A of the *City of Santa Ana General Plan Update Infrastructure Technical Report for Hydrology, Sewer, Water, and Water Quality* for sewer flow calculations.
gpd: gallons per day
SF: square feet

Under the existing conditions, average daily sewer flows are estimated at 30 million gallons per day (mgd) throughout the City of Santa Ana. Under existing conditions, the focus areas represent approximately 7.5 percent of the City's sewer flows. These flow estimates are for land planning purposes only.

Wastewater Treatment

OCSD operates two treatment plants, Treatment Plant No. 1 and Reclamation Plant No. 2. Wastewater from the plan area is treated at OCSD's Treatment Plant No. 1 in Fountain Valley. The treatment plant has a secondary treatment capacity of 182 mgd (SARWQCB 2012). Average wastewater flows through Plant No. 1 are about 120 to 130 mgd; thus, the minimum residual capacity is about 52 mgd (OCSD and OCWD 2016). Wastewater treated at Treatment Plant No. 1 is sent to the Orange County Water District (OCWD) for further treatment in the groundwater replenishment system (GWRS) facility in Fountain Valley.

GWRS produces approximately 100 mgd of purified water for residents of Orange County. Secondary-treated wastewater from OCSD undergoes a three-step treatment process in the GWRS, which consists of microfiltration, reverse osmosis, and advanced oxidation with ultraviolet light and hydrogen peroxide. The treated water is injected into a seawater barrier and pumped to recharge basins where it naturally percolates into the groundwater basin. Ultimate capacity for the GWRS is projected at 130 mgd after facilities are completely expanded. This requires OCSD to provide an additional 40 mgd of secondary-treated wastewater to OCWD. This increase will be accommodated through changes and additions to infrastructure that will allow additional treated effluent from Reclamation Plant No. 2 in Huntington Beach to be delivered to the GWRS treatment

system in Fountain Valley (OCSD 2017). Construction of the GWRS expansion is estimated to be completed in 2023 (OCWD 2020).

Existing Sewer Capacity Assessment

The City's SMP analyzed the age of the sewer infrastructure, and the capacity of the City's sewer collection system for existing and future peak-flow conditions under both dry and wet weather conditions. In addition, the 2016 SMP summarized the rankings of the condition of the sewer pipes/manholes and the recommended rehabilitation and replacement of these sewers based on the most recent CCTV inspection reports. The results of the capacity analysis and condition assessment are summarized herein.

City Sewer Capacity Assessment

The capacity of the City's sewer system was assessed for all major trunk lines with diameters ranging from 10 to 39 inches in size. In total, approximately 97 miles of City pipelines, 20 miles of OCSD trunk lines, and a total of 1,799 manholes were modelled. The capacity of the system was assessed for existing and future (2040) base flow scenarios in addition to peak wet-weather flows (PWWF) derived for a 10-year storm event.

The SMP identified four areas of the City where sewer capacity deficiencies were identified. The most significant areas of potential wet weather capacity deficiencies are between Fairhaven Avenue and 17th Street running through Old Grand Street, to Santa Clara Avenue, and then onto Wright Street in the northeastern area of the city.

City Sewer Condition Assessment

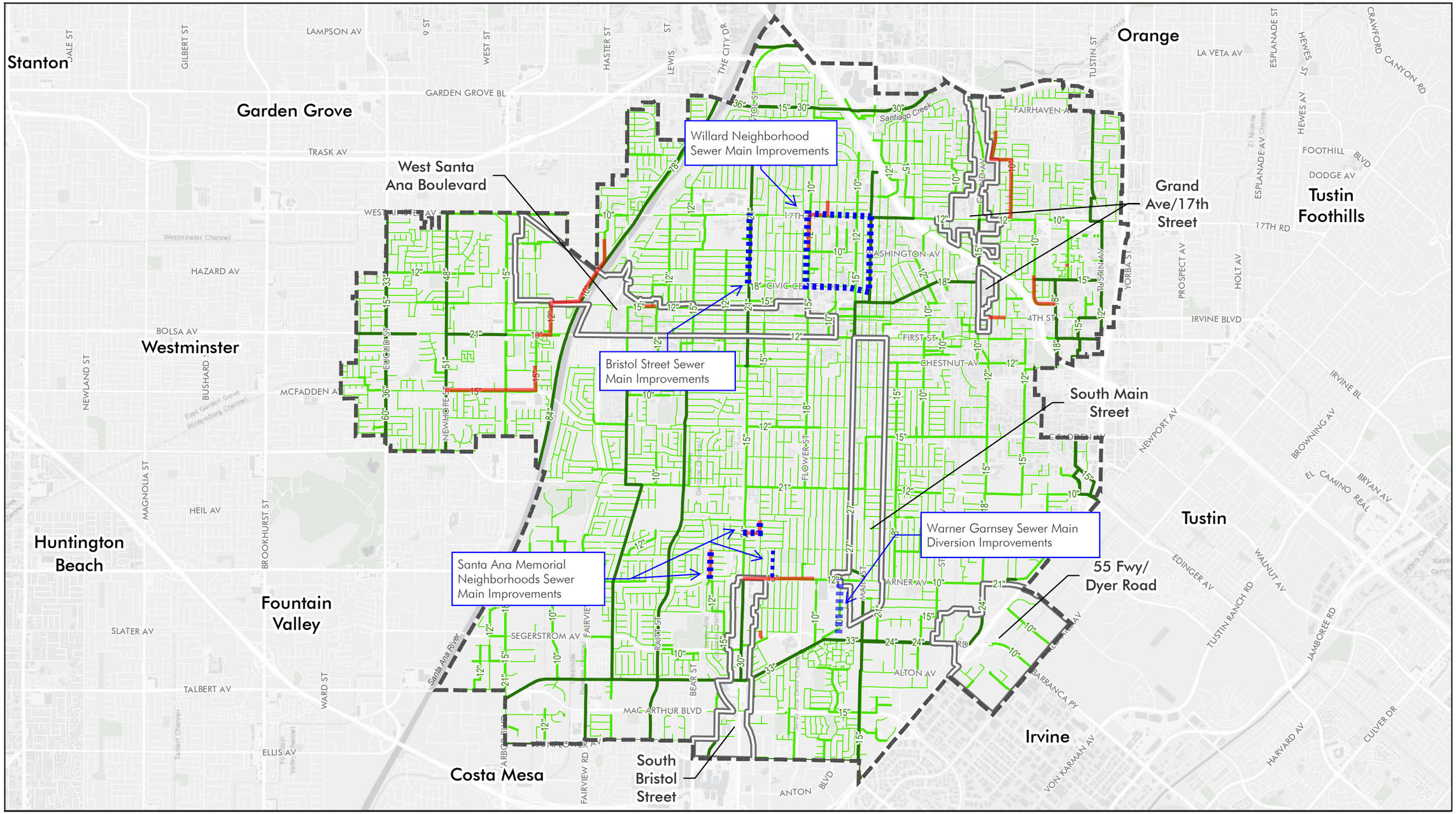
In addition to the sewer capacity assessment, the City assessed the condition of its sewer system. The review identified several defects in the condition in the sewer system, primarily in the central part of the city, including the downtown area. This area is known to have older pipes compared to the outer neighborhoods and consequently has more defect issues.

The combined deficiencies and recommended improvement areas found by the capacity assessment and the condition assessment are shown in Figure 5.18-2, *Existing Sewer System Improvement Projects*.

Capital improvement projects are prioritized to allocate available funds to critical projects based on risk of failure and level of impact to economic, social, and environment issues. Similar to many public agencies, the City has an annual budget for replacing or rehabilitating aging infrastructure and therefore requires a systematic and defensible method for prioritizing both capacity and condition-based improvement projects. The SMP has aided in prioritizing projects on each year's CIP. The SMP references 20 projects for Fiscal Year (FY) 2016/2017 to FY 2020/2021. The current 2018/2019 CIP sewer projects are listed below:

- Bristol Street Sewer Main Improvements
- Santa Ana Memorial Neighborhoods Sewer Main Improvements
- Warner Garnsey Sewer Main Diversion Improvements (project listed in SMP as CIP-CAP-006A)
- Willard Neighborhood Sewer Main Improvements

Figure 5.18-2 - Existing Sewer System Improvement Projects



Source: FUSCOE Engineering, 2020

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Furthermore, the current CIP projects currently under design or construction are listed below:

- Citywide Sewer Main Improvements Phase II
- Columbine Sewer Main Improvements
- Washington Square Neighborhood Sewer Main Improvements
- Flower Street Sewer Main Improvements (Washington Street – 17th)
- Segerstrom/San Lorenzo Sewer List Station

In addition to the SMP and CIP sewer system management procedures, the City currently requires sewer monitoring studies for all projects that go through the entitlement process. After submittal and review of these studies by City staff, if the sewer system is found to be deficient, the developer will be required to upsize the portion of the sewer pipe within the frontage of their property. There may be options depending on the condition of the sewer infrastructure for the developers to enter into a joint cost-sharing agreement with the City to cover a portion of the cost for required upsizing that may be done by the City at a later date. If improvements are needed to infrastructure downstream of the project site, the developer may be required to participate and pay into the fair-share agreement currently employed by the City. The fair-share agreement will allow the developer to fund a percentage of the downstream improvement that will be carried out by the City in the future. Therefore, the City has a robust process in place on a project-by-project basis to ensure the sewer system is functioning efficiently.

Orange County Sanitation District Master Plan Update Report No. 3

OCSD prepared an update to its Master Plan in December 2019. The purpose of this Update Report was to evaluate collections system capacity throughout the OCSD service area. The 2019 Update Report determined a series of trunk line segments that exhibited hydraulic deficiencies or potential hydraulic deficiencies under existing (2017) and buildout (2040) conditions. Hydraulic deficiencies were assessed for both peak dry-weather flow and peak wet-weather flow scenarios. Of the assessed segments, the Greenville-Sullivan Trunk Line within the GPU boundary was shown to exhibit surcharge conditions for peak wet-weather flows. A capacity improvement project for the Greenville-Sullivan Trunk Line has been included in OCSD's proposed projects and is currently under review. The project will upsize all 33-inch segments within the trunk line to a 39-inch diameter, addressing all surcharge concerns.

5.18.1.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a project would have a significant effect on the environment if the project would:

U-1 Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

U-3 Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

5.18.1.3 REGULATORY REQUIREMENTS AND GENERAL PLAN UPDATE POLICIES

Regulatory Requirements

RR U-1 Any sewer utility infrastructure improvement associated with development under the General Plan Update shall be designed, constructed, and operated in accordance with Chapter 8, Article III, and Chapter 39, Article III, and of the Santa Ana Municipal Code.

RR U-2 Any new connections to the Orange County Sanitation District system or expansion of a previous connection shall pay a capital facilities charge in accordance with Ordinance No. OCSD-40.

RR U-3 Sewer utility infrastructure improvements associated with development under the General Plan Update shall be designed, constructed, and operated in accordance with the Orange County Sanitation District's Ordinance Nos. 25 and 48 and the wastewater discharge requirements of the National Pollutant Discharge Elimination System permit (Order No. R8-2012-0035).

General Plan Update Policies

The following are relevant policies of the Santa Ana GPU, which may contribute to reduce potential impacts to wastewater and treatment facilities as a result of implementation of the proposed project.

Public Services Element

- **Policy 3.2. Wastewater Service:** Provide and maintain wastewater collection facilities which adequately serve existing land uses and future development projects while maximizing cost efficiency.
- **Policy 3.3. Wastewater Technology:** Explore new technologies that treat and process wastewater that reduce overall capacity needs of centralized wastewater systems.
- **Policy 3.12. Sewer and Water:** Maintain and upgrade sewer and water infrastructure through impact fees from new development and exploring other funding sources.

5.18.1.4 ENVIRONMENTAL IMPACTS

Impact Analysis

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

Impact 5.18-1: Development pursuant to the GPU would require or result in the relocation or construction of new or expanded wastewater facilities. [Threshold U-1]

Under the proposed land use changes, sewer flows would increase across the City of Santa Ana. A total increase of 36,261 dwelling units and increase of approximately 5,849,220 square feet of non-residential uses are proposed. Sewer flows for proposed conditions were projected using the same methodology as existing sewer flows; however, flow factors for residential land uses are based on 2025–2040 flow factors from the MWDOC Orange County Water Reliability Study.. Table 5.18-3, *Average Sewer Flows – General Plan Update Buildout*, provides a summary of the proposed increases in sewer flows under GPU implementation..

Table 5.18-3 Average Sewer Flows – General Plan Update Buildout

Area	Number of Dwelling Units	Non-Residential SF	Proposed Sewer Flows (gpd)	Existing Sewer Flows (gpd)	Change in Sewer Flows (gpd)	% Change
Focus Area						
West Santa Ana Boulevard	3,920	2,808,805	941,567	827,553	+114,014	13.8%
South Bristol Street	5,492	5,082,641	1,257,985	125,918	+1,132,067	899%
Grand Avenue/17th Street	2,283	703,894	451,305	188,358	+262,947	140%
South Main Street	2,308	946,662	565,847	565,500	+347	0.1%
55 Freeway/Dyer Road	9,952	6,142,283	2,120,271	538,450	+1,581,821	294%
Focus Area Total	**23,955**	**15,684,285**	**5,336,974**	**2,245,779**	**+3,091,195**	**138%**
Remainder of City						
All Other Areas of City	91,098	57,283,531	28,829,359	27,786,561	+1,042,778	3.75%
City of Santa Ana Total	**115,053**	**72,967,816**	**34,166,333**	**30,032,340**	**+4,133,993**	**13.8%**

Source: Fuscoe 2020a.
Notes:
See Appendix A of the *City of Santa Ana General Plan Update Infrastructure Technical Report for Hydrology, Sewer, Water, and Water Quality* for sewer flow calculations.
gpd: gallons per day
SF: square feet

Full implementation of the proposed land use changes has the potential to increase sewer flows by 4.13 mgd within the City and by 3.09 mgd throughout the focus areas. Therefore, the focus areas represent approximately 75 percent of the proposed increases in sewer flows throughout the plan area. These flow estimates are for infrastructure planning purposes only.

Wastewater capacity analysis, included in the 2016 SMP, is based on existing water meter data to establish baseline conditions and uses several resources, including population projections and development projects associated with the current General Plan to project final buildout conditions. It is helpful to understand how sewer flows under the current General Plan compare to the proposed GPU to refine the identification of impacts. The proposed GPU modifies buildout numbers within the GPU focus areas. In comparison to the current General Plan, the proposed GPU would add 13,195 dwelling units (DUs), consisting primarily of multifamily units, and would reduce commercial square footage by approximately 2.7 million square feet. Table 5.18-4 compares land use changes between the current General Plan and the proposed GPU. This analysis is based on total DU count and commercial square footage only and does not differentiate between single-family and multifamily sewer flow factors.

Table 5.18-4 Sewer Flow Changes, Current General Plan to Proposed GPU

Area	Change in Housing Units, Current GP to Proposed (dwelling units)	Change in Commercial Areas, Current GP to Proposed (square feet)	Change in Sewer Flows (gpd)
Focus Area			
West Santa Ana Boulevard	+ 1,308	- 38,106	+ 234,115
South Bristol Street	+ 2,232	+ 946,213	+ 452,011
Grand Avenue/17th Street	+ 1,766	- 1,715,794	+ 226,655
South Main Street	+ 667	- 1,481,837	+ 43,444
55 Freeway/Dyer Road	+ 7,222	- 376,333	+ 1,284,029
Focus Area Total	**+ 13,195**	**- 2,665,857**	**+ 2,243,264**
Remainder of City			
All Other Areas of City	+ 0	+ 0	+ 0
Citywide Total	**+ 13,195**	**-2,665,857**	**+ 2,243,264**

Source: Fuscoe 2020a.

As shown in Table 5.18-4, increases in sewer flows under the proposed GPU would be distributed across the five focus areas, with no deviations from the current General Plan elsewhere in the city. As the 2016 SMP capacity analysis was based on the current General Plan, increased wastewater generation from focus area development under the GPU would alter the capacity assessment and recommended sewer upsizing to achieve optimal hydraulic capacity. Additional flows beyond those modeled using the current General Plan are anticipated to impact the five focus areas as follows:

- **West Santa Ana Boulevard Focus Area.** There are two recommended hydraulic improvements (CIP-CAP-003 of SMP) within the West Santa Ana Boulevard Focus Area as identified in the SMP. The recommended improvements along the CIP-CAP-003 segment are to upsize the pipes from 10 to 12 inches in diameter to 15 inches in diameter. An additional 234,115 gallons per day (gpd) is anticipated across the focus area under the proposed GPU compared to the modeled land use buildout from the current GP. As a result of the proposed land uses under the GPU, the recommended improvement to a 15-inch line may need to be increased to an 18-inch line and will require additional flow monitoring and sewer modeling to confirm final pipe size.

- **South Bristol Street Focus Area.** Two improvements immediately adjacent to the focus area were identified in the 2016 SMP. Under proposed GPU buildout, an additional 452,011 gpd of flows are anticipated through the focus area as compared to current GP; or an additional 1.13 mgd as compared to existing land use. While it is unlikely that the two improvement areas adjacent to the focus area will be exacerbated by the increase in flows, the magnitude of flows may result in additional improvements or deficiencies within or adjacent to the focus area. The sewer master plan demonstrated there is sufficient capacity under current and future conditions with the ability to accommodate significant growth over time. A primary reason is that the entire area is directly adjacent to large OCSD trunk lines which results in greater capacity. Based on the sewer flow monitoring requirements for local City lines and OCSD's separate detailed capacity assessment of their trunk lines, the system would be managed and updated to accommodate the full buildout of the proposed GPU over time.

- **Grand Avenue / 17th Street Focus Area.** There are two nearby deficiency areas; however, the focus area is not directly tributary to any recommended improvements (identified capacity issues are upstream). The additional 226,655 gpd under the proposed GPU as compared to the current GP, or additional 262,947 from existing land use to proposed GPU, will not exacerbate existing adjacent upstream capacity issues within the 15- and 18-inch trunk lines.

- **South Main Street Focus Area.** There are no identified deficiencies in this focus area. The proposed GPU will result in a 43,444 gpd increase in flows spread across the focus area from current General Plan to proposed GPU; or only 347 gpd from existing land use as compared to the proposed GPU. Given the relatively small increase in flows (0.04 mgd) spread across the focus area and the lack of deficiencies identified in the SMP, it is not anticipated that any new deficiencies would result from the proposed GPU land uses.

- **55 Freeway/Dyer Focus Area.** There are no identified deficiencies in this focus area. While there were no capacity issues or recommended improvement projects within or adjacent to the focus area identified in the 2016 SMP, buildout of the proposed GPU as compared to the current GP would result in an additional 1,284,029 gpd (1.3 mgd) across the focus area; or approximately 1.6 mgd from existing land use to the proposed GPU. The SMP demonstrated there is sufficient capacity under current and future conditions with the ability to accommodate significant growth over time. A primary reason is that the entire area is directly adjacent to large OCSD trunk lines, which results in greater capacity. Based on the sewer flow monitoring requirements for local City lines and OCSD's separate detailed capacity assessment of their trunk lines, the system would be managed and updated to accommodate the full GPU buildout over time.

At a citywide scale, the City's SMP and CIP process would adequately prioritize necessary projects as developments under the GPU come online. Additionally, any project within the City and under the proposed GPU that goes through the entitlement process would be required to perform a sewer monitoring study. After submittal and review of the study by City staff, if the sewer system was found to be deficient, the developer would be required to upsize the portion of the sewer pipe within the frontage of their property. There may be options depending on the condition of the sewer infrastructure for the developers to enter into a Joint Cost-Sharing Agreement with the City to cover a portion of the cost for required upsizing that may be done by the City at a later date. If improvements are needed to infrastructure downstream of the project site, the developer may be required to participate and pay into the fair-share agreement currently employed by the City. The fair-share agreement would allow the developer to fund a percentage of the downstream improvement that would be carried out by the City in the future. Therefore, impacts to the City's wastewater system would be less than significant.

Furthermore, the OCSD Master Plan Update Report No. 3 (2019) notes surcharge conditions through the Greenville-Sullivan Trunk Line. A capacity improvement project for the trunk line has been proposed and is currently under review. The Greenville-Sullivan Trunk Line is not within a focus area but is downstream of the West Santa Ana Boulevard Focus Area that is anticipating an increase in sewer flows of 114,014 gpd or 0.01 mgd. This anticipated increase from the West Santa Ana Boulevard Focus Area will happen over a series of several years as new developments and redevelopments come online. The CIP project planned will be upsizing

the Greenville-Sullivan Trunk Line from a 33-inch-diameter line to a 39-inch-diameter line, which is more than adequate to handle the increase of 0.01 mgd proposed under the Santa Ana GPU.

OCSD bases its long-term sewer capacity assessments on the Center for Demographic Research (CDR) population estimates in coordination with all cities in their service area and does not generally use City-specific General or Specific Plans to plan or conduct capacity analysis. For improvement projects associated with new developments and redevelopments, OCSD manages required upgrades based on detailed population growth models and on a project-by-project basis. In cases where a trunk line requires upsizing as a result of a specific project and the project is not included in the CIP or any planning documents, OCSD allows the project applicant to conduct the trunk line upsize and follow a reimbursement agreement process. Therefore, OCSD has a functioning and effective process in place to ensure the regional sewer infrastructure will support future developments under the Santa Ana GPU and impacts would be less than significant.

Level of Significance Before Mitigation: With the implementation of RR U-1 and RR U-2 and Policies 3.2 and 3.12 (see Section 5.18.1.3), Impact 5.18-1 would be less than significant.

Impact 5.18-2: OCSD and OCWD have adequate capacity to serve development pursuant to the GPU in addition to the providers existing commitments. [Threshold U-3]

OCSD's Treatment Plant No. 1, which serves the plan area, has a treatment capacity of 182 mgd and an average wastewater flow of approximately 120 to 130 mgd. Therefore, the plant has a minimum residual capacity of about 52 mgd. Therefore, OCSD's Treatment Plant No. 1 would be able to accommodate the 6.8 mgd increase in wastewater generated by development pursuant to the GPU at buildout.

Furthermore, the effluent from Treatment Plant No. 1 would go through additional treatment in the GWRS, which currently produces 100 mgd of purified water. The plant has an ultimate capacity of 130 mgd after facilities are completely expanded in 2023. The GWRS would be able to accommodate an additional 40 mgd of secondary-treated wastewater from OCSD at that point. Therefore, the GWRS has enough capacity to treat the wastewater generated from buildout of the GPU.

Additionally, if development under the GPU requires additional sewer flow connections through OCSD sewer lines or pump stations, it would be required to pay a sewer connection fee prior to issuance of building permits. Any sewer utility infrastructure improvement would be designed, constructed, and operated in accordance with the City's Design Guidelines for Water and Sewer Facilities. To ensure the quality of wastewater conveyed to the wastewater treatment plants does not cause any impacts, development would need to abide by the requirements of OCSD's ordinances Nos. 25 and 48 and the wastewater discharge requirements of the NPDES permit (Order No. R8-2012-0035). Thus, wastewater generated through development in accordance with the proposed project would have a less-than-significant impact on the City and OCSD's overall wastewater collection and treatment facilities and systems.

Level of Significance Before Mitigation: With the implementation of RR U-3 and Policy 3.3 (see Section 5.18.1.3), Impact 5.18-2 would be less than significant.

5.18.1.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and GPU policies, Impacts 5.18-1 and 5.18-2 would be less than significant.

5.18.1.6 MITIGATION MEASURES

No mitigation is required.

5.18.1.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts 5.18-1 and 5.18-2 would remain less than significant.

5.18.2 Water Supply and Distribution

5.18.2.1 ENVIRONMENTAL SETTING

Regulatory Background

Federal

Federal Safe Drinking Water Act

The Safe Drinking Water Act (SDWA), the principal federal law intended to ensure safe drinking water to the public, was enacted in 1974 and has been amended several times since it came into law. The act authorizes the U.S. EPA to set national standards for drinking water, called the National Primary Drinking Water Regulations, to protect against both naturally occurring and man-made contaminants. These standards set enforceable maximum contaminant levels in drinking water and require all water providers in the United States to treat water to remove contaminants, except for private wells serving fewer than 25 people. In California, the State Water Resources Control Board (SWRCB) conducts most enforcement activities. If a water system does not meet standards, it is the water supplier's responsibility to notify its customers.

State

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act (Water Code Sections 13000 et seq.), which was passed in California in 1969 and amended in 2013, the SWRCB has authority over state water rights and water quality policy. This act divided the state into nine regional basins, each under the jurisdiction of a Regional Water Quality Control Board (RWQCB) to oversee water quality on a day-to-day basis at the local and regional level. RWQCBs engage in a number of water quality functions in their respective regions. RWQCBs regulate all pollutant or nuisance discharges that may affect either surface water or groundwater. Santa Ana is overseen by the San Ana Area RWQCB.

Urban Water Management Planning Act

The Urban Water Management Planning Act of 1983, California Water Code Sections 10610 et seq., requires water suppliers to prepare plans that:

- Plan for water supply and assess reliability of each source of water, over a 20-year period in 5-year increments.
- Identify and quantify adequate water supplies, including recycled water, for existing and future demands, in normal, single-dry, and multiple-dry years.
- Implement conservation and the efficient use of urban water supplies. Significant new requirements for quantified demand reductions have been added by the Water Conservation Act of 2009 (Senate Bill 7 of Special Extended Session 7 [SBX7-7]), which amends the act and adds new water conservation provisions to the Water Code.

Senate Bill 610 and 221

Senate Bill 610 (SB 610) (2001) amended the California Urban Water Management Planning Act, Sections 10610 et seq. of the California Water Code. It mandates that a city or county approving certain projects subject to CEQA[1] (i) identify any public water system that may supply water for the project, and (ii) request those public water systems to prepare a specified water supply assessment. The assessment is to include the following:

1. A discussion of whether the public water system's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection would meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses.
2. The identification of existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project and water received in prior years pursuant to those entitlements, rights, and contracts.
3. A description of the quantities of water received in prior years by the public water system under the existing water supply entitlements, water rights, or water service contracts.
4. A demonstration of water supply entitlements, water rights, or water service contracts by the following means:
5. The identification of other public water systems or water service contract holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system.
6. Additional information is required if groundwater is included in the supply for the proposed project.

The water supply assessment shall be included in any environmental document prepared for the project. The assessment may include an evaluation of any information included in that environmental document. A

[1] Under Water Code Section 10912(a)(7), SB 610 applies to a CEQA project that "would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling unit project."

determination shall be made whether the projected water supplies would be sufficient to satisfy the demands of the project, in addition to existing and planned future uses.

Additionally, SB 610 requires new information to be included as part of an Urban Water Management Plan (UWMP) if groundwater is identified as a source of water available to the supplier. Information must include a description of all water supply projects and programs that may be undertaken to meet total projected water use. SB 610 prohibits eligibility for funds from specified bond acts until the plan is submitted to the state.

Furthermore, SB 221 requires written verification that there is sufficient water supply available for applicable new residential subdivisions. The verification must be provided before commencement of construction.

Mandatory Water Conservation

Following Governor Brown's declaration of a state of emergency on July 15, 2014, the SWRCB adopted Resolution No. 2014-0038. The Emergency Regulation was partially repealed by Resolution No. 2017-0024. The repealed regulation prohibited several activities, including (1) the application of potable water to outdoor landscapes in a manner that causes excess runoff; (2) the use of a hose to wash a motor vehicle except where the hose is equipped with a shut-off nozzle; (3) the application of potable water to driveways and sidewalks; (4) the use of potable water in non-recirculating ornamental fountains; and (5) the application of potable water to outdoor landscapes during and within 48 hours after measurable rainfall. The SWRCB resolution also directed urban water suppliers to submit monthly water monitoring reports to the SWRCB.

The Water Conservation Act of 2009 (Senate Bill X7-7)

The Water Conservation Act of 2009, SB X7-7, requires all water suppliers to increase water use efficiency. The legislation sets an overall goal of reducing per-capita water use by 20 percent by 2020, with an interim goal of a 10-percent reduction in per capita water use by 2015. Effective in 2016, urban retail water suppliers who do not meet the water conservation requirements established by this bill are not eligible for state water grants or loans. SB X7-7 requires that urban water retail suppliers determine baseline water use and set reduction targets according to specified standards, it also requires that agricultural water suppliers prepare plans and implement efficient water management practices.

20x2020 Water Conservation Plan

The 20x2020 Water Conservation Plan, issued by the California Department of Water Resources (DWR) in 2010 pursuant to the Water Conservation Act of 2009 (SBX7-7), established a statewide water conservation target of 20-percent reduction in water use by 2020 compared to the state's 2005 baseline use.

Water Conservation in Landscaping Act of 2006 (Assembly Bill [AB] 1881)

The Water Conservation in Landscaping Act of 2006 (AB 1881) required DWR to update the State Model Water Efficient Landscape Ordinance (MWELO) by 2009. The state's model ordinance was issued on October 8, 2009. Under AB 1881, cities and counties are required to adopt a state-updated model landscape water conservation ordinance by January 31, 2010, or to adopt a different ordinance that is at least as effective in conserving water as the updated Model Ordinance. It also requires reporting on the implementation and enforcement of local ordinances, with required reports due by December 31, 2015 (DWR 2019).

2015 Update of the State Model Water Efficient Landscape Ordinance (Per Governor's Executive Order B-29-15)

To improve water savings in the landscaping sector, DWR updated the Model Ordinance in accordance with Executive Order B-29-15. The Model Ordinance promotes efficient landscapes in new developments and retrofitted landscapes. The Executive Order calls for revising the Model Ordinance to increase water efficiency standards for new and retrofitted landscapes through more efficient irrigation systems, greywater usage, and on-site stormwater capture, and by limiting the portion of landscapes that can be covered in turf.

New development projects that include landscape areas of 500 square feet or more are subject to the ordinance. This applies to residential, commercial, industrial, and institutional projects that require a permit, plan check, or design review. The previous landscape size threshold for new development projects ranged from 2,500 to 5,000 square feet.

California Green Building Standards Code

The California Green Building Standards Code (CALGreen; Title 24, California Code of Regulations, Part 11) establishes mandatory residential and nonresidential measures for water efficiency and conservation under Sections 4.3 and 5.3. The provisions establish the means of conserving water used indoors, outdoors, and in wastewater conveyance. The code includes standards for water-conserving plumbing fixtures and fittings and the use of potable water in landscaped areas.

Local

City of Santa Ana Water Master Plan

The 2017 Santa Ana Water Master Plan (WMP) was prepared to document a multi-year capital improvement program to maintain the City's water utility infrastructure systems in sound operable condition and to meet the level of service expectations of the City over the proposed planning period from 2017/2018 to 2039/2040. The goal of the 2017 WMP was to identify needed system improvements, define typical refurbishment and replacement requirements, recommend the prioritization of these improvements/replacements, and establish an overall general implementation schedule and budget for these future capital improvement projects.

City of Santa Ana Urban Water Management Plan 2015

The City's UWMP is required under Water Code Section 10610 through 10656 of the Urban Water Management Planning Act, effective January 1, 1984. The act requires all urban water suppliers to prepare, adopt, and file a UWMP with DWR every five years. The plan outlines current water demands, sources, and supply reliability to the City by forecasting water use based on climate, demographics, and land use changes within the City. The plan also provides demand-management measures to increase water-use efficiency for various land use types and details a water supply contingency plan in case of shortage emergencies (Metropolitan 2016).

City of Santa Ana Design Guidelines for Water and Sewer Facilities

The purpose of the Santa Ana Design Guidelines for Water and Sewer Facilities is to provide applicants (developer/builder) with a general understanding of the design criteria for the City of Santa Ana water and sewer facilities for new development or re-development projects.

City of Santa Ana's Construction Standards

The City's Construction Standards are used as a guide by developers, engineers, and contractors in the design and installation of all additions, replacements, and modifications to the City's public water system. It is the intent that these specifications will provide uniformity in materials and installation of piping, valves, fire hydrants, service laterals, meters, and other water system appurtenances. These standards will also provide construction methods and controls to be used by contractors to construct, pressure-test, disinfect, and place in service all improvements and modifications to the City's public water system.

Santa Ana Municipal Code

Chapter 8 - Article III (Plumbing Code): This article of the Santa Ana Municipal Code incorporates the 2016 California Plumbing Code by reference.

Chapter 8 - Article XVI (Green Building Standards Code): This article of the Santa Ana Municipal Code incorporates the California Green Building Standards Code by reference.

Chapter 39 - Article II (Water): This article requires a permit prior to connecting to a water main or prior to an increase in size of an existing water meter or service in addition to the payment of fees in amounts as established by resolution of the city council.

Chapter 39 - Article VI (Water Shortage Contingency Plan): The purpose of this article is to prevent the waste or unreasonable use of water and to provide a mandatory water conservation plan during a proclaimed water shortage. Division 4 (Regulations Governing Water Conservation Phases) details permanent water conservation requirements in addition to regulations governing a Phase 1, Phase 2, and Phase 3 water supply shortage.

Chapter 41 - Article XVI (Water Efficient Landscape Standards): The City adopted this article to be consistent with Executive Order B-29-15. The article includes implementation procedures and landscape water use standards.

Existing Conditions

Water Distribution System

The City's Water Utility provides water service within a 27-square-mile service area. The service area includes the City of Santa Ana, and a small neighborhood in the City of Orange, near Tustin Avenue and Fairhaven by the northeast corner of Santa Ana. There are also Irvine Ranch Water District (IRWD) water lines that serve portions of the city. In addition, OCWD provides recycled water service to portions of the city. Metropolitan Water District of Southern California (Metropolitan) also has delivery/conveyance lines that run through the

city. The City's water system has a total of nine reservoirs with a storage capacity of 49.3 million gallons, 21 groundwater wells, and seven imported water connections.

The City's water system consists of two pressure zones (High Zone and Low Zone). Each of these pressure zones have groundwater wells, reservoirs, and booster pump stations that supply potable water to the City's customers. In general, the facilities are consolidated into several stations consisting of multiple groundwater wells, a storage reservoir, and a booster pump station. At each station, the wells pump groundwater into the storage reservoir and the booster pump station pumps water from the storage reservoir to the distribution system. The City's water distribution system consists of approximately 480 miles of transmission/distribution mains ranging from 4 to 30 inches in diameter. Most of the City's water lines were constructed in the 1960s. The primary water facilities within the focus areas are summarized in Table 5.18-5 and shown on Figure 5.18-3, *Existing Water System Facilities*.

Table 5.18-5 Existing Water Facilities within the Focus Areas

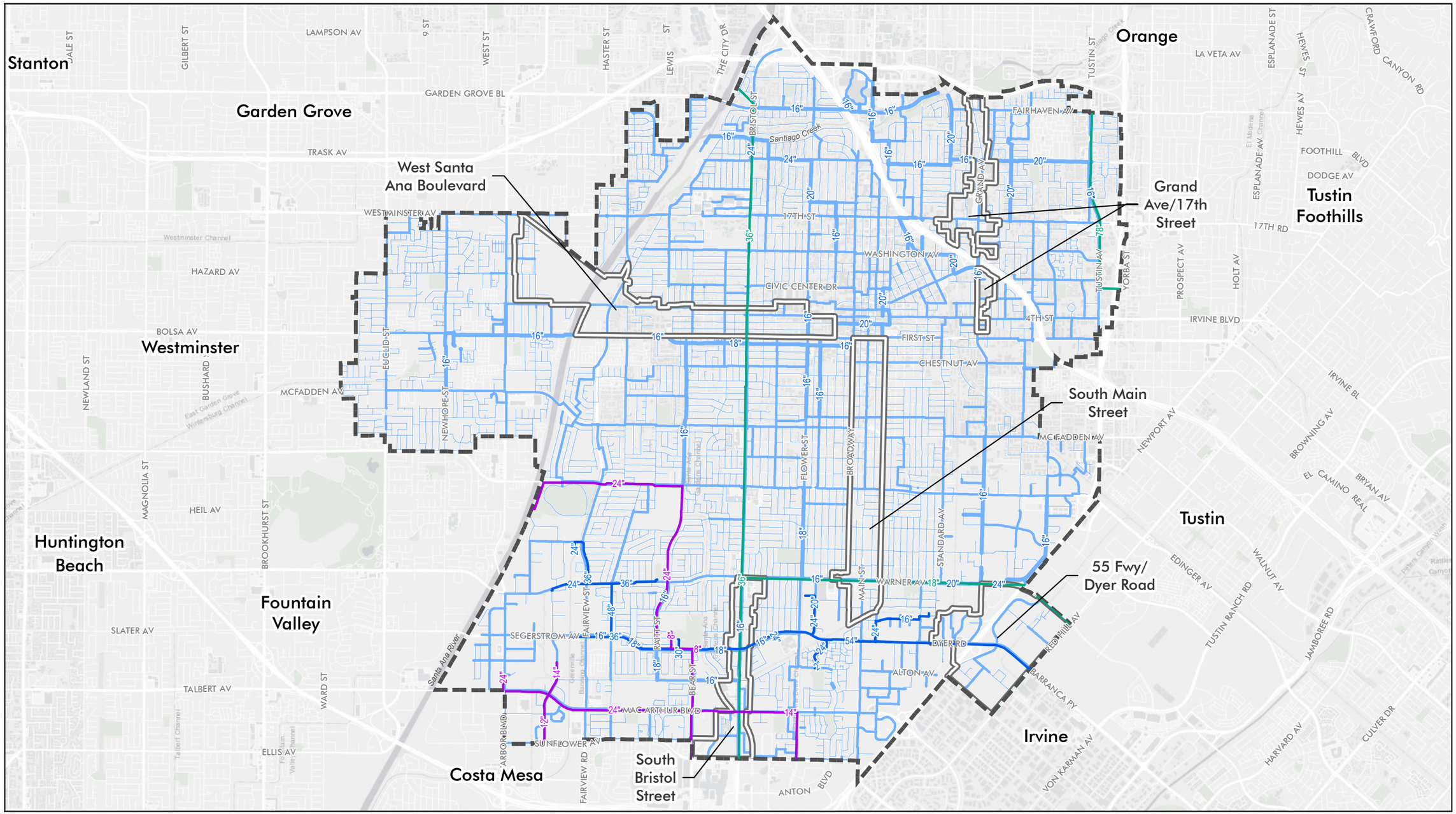
Focus Area	Primary Sewer System Facilities
West Santa Ana Boulevard	6"-12" City water lines 36" MWD conveyance water line
Grand Avenue/17th Street	6"-12" City water lines
South Main Street	4"-24" City water lines 16"-18" MWD conveyance line 24"-54" IRWD water lines
South Bristol Street	8" – 36" City water lines 36" MWD conveyance line 16"-18" IRWD water lines 14" OCWD reclaimed water lines
55 Freeway/Dyer Road	8"-12" City water lines 24" MWD conveyance line 54" IRWD water line

Source: Fuscoe 2020a.

Existing Water Distribution Flows

For each land use in the City of Santa Ana and its focus areas, water flow estimates were developed to provide a baseline condition and allow for comparisons against any proposed land use changes. Acreages and units of development (i.e., residential and non-residential) were used along with their corresponding flow factors to identify changes in water flow. Commercial water flow factors were provided from the City of Santa Ana Guidelines for Water and Sewer Facilities (2017). Residential water flow factors were provided from the MWDOC Orange County Water Reliability Study (2016). Similar to the methodology employed to estimate sewer flows as described in Section 5.18.1.1, the generation factors for estimating water flows are typically conservative in nature and tend to over-represent water flows as a means to incorporate a safety factor into pipe network design and hydraulic capacity assessments specifically for infrastructure.

Figure 5.18-3 - Existing Water System Facilities



Source: FUSCOE Engineering, 2020

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Table 5.18-6 provides a summary of the existing condition water flow for the city and focus areas. Detailed calculations are provided in the *Infrastructure Technical Report for Hydrology, Sewer, Water, and Water Quality* in Appendix H-a.

Table 5.18-6 Existing Average Daily Water Flows

Area	Number of Dwelling Units	Non-Residential Square Footage	Average Sewer Flows (gpd)
Focus Area			
West Santa Ana Boulevard	2,658	3,090,472	880,807
Grand Avenue/17th Street	220	1,577,511	136,957
South Main Street	561	1,400,741	202,362
South Bristol Street	1,720	1,685,978	600,682
55 Freeway/Dyer Road	1,221	5,666,453	582,841
Focus Area Total	**6,380**	**13,421,155**	**2,403,648**
Remainder of City			
All Other Areas of City	72,412	53,697,441	29,403,648
Citywide Total	**78,792**	**67,118,596**	**31,833,589**

Source: Fuscoe 2020a.
Notes:
gpd – Gallons per day

Under the existing conditions, average daily water flows are estimated at 31.83 mgd through the city. Focus area water flows represent approximately 7.5 percent of existing city-wide water flows. These conservative flow estimates are for infrastructure capacity planning purposes only.

City of Santa Ana Water Master Plan

The 2017 Santa Ana Water Master Plan (WMP) is a multi-year capital improvement program to maintain the City's water utility infrastructure systems in sound operable condition and to meet the level of service expectations of the City over the proposed planning period from 2017/2018 to 2039/2040. The WMP analyzed several components of the City's water system, including groundwater well rehabilitation needs, reservoir and pump station status, distribution system upgrade needs, and other miscellaneous improvements. Maintaining groundwater wells has been given the highest priority as groundwater supply is more affordable as compared with water supplies purchased from Metropolitan.

The results of the water supply analysis indicated that the City's water system has adequate capacity and distribution capabilities to supply the entire water system demands using only groundwater wells. However, as discussed in the WMP, as of 2017, based on age of the existing pipe, 20 percent (about 560,000 feet of pipe) of the City's distribution system has already past the pipe material's typical useful life. By the end of the proposed planning period (fiscal year 2039/2040), 70 percent (about 1,870,000 feet of pipe) of the City's distribution system will be past the material's lifetime. In summary, while the City's distribution system is robust and hydraulically sound, the system is old and needs to be systematically replaced. The recommended proposed

pipeline replacement program from the WMP is summarized herein, in addition to updates from the City's most recent CIP Update and discussions with the City on the status of improvement projects:

- Bristol Street Water Main Improvements Phase 4
- Cambridge Pump Station Entry Improvements
- Washington Well Site Improvements

The 2018/2019 CIP projects and the 2017 WMP projects are shown in Figure 5.18-4, *Existing Water System Improvement Projects*.

Existing Water Supply

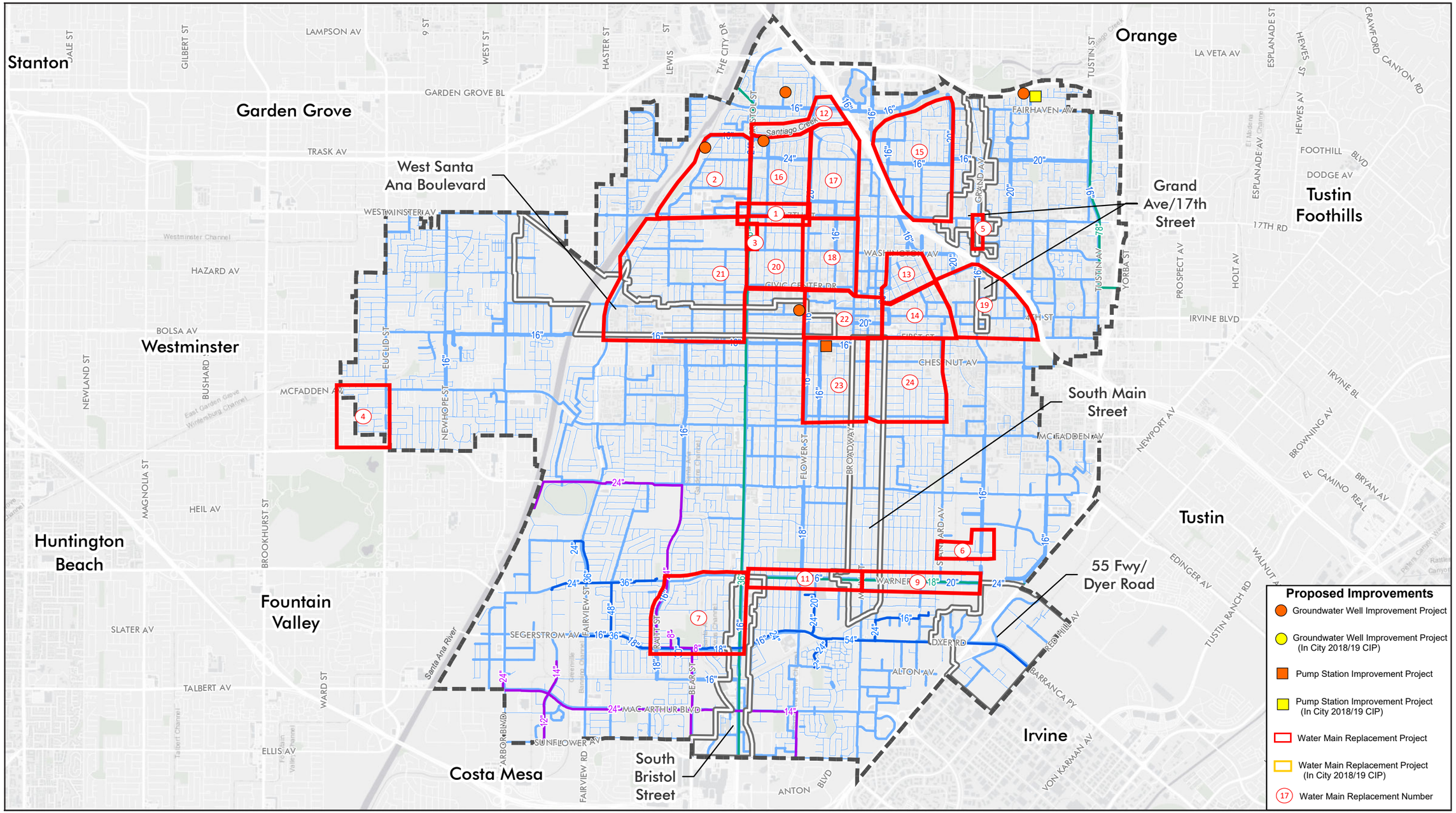
The City obtains water from two primary sources: local groundwater from the Orange County Groundwater Basin (OC Basin), which is managed by OCWD, and imported water from Metropolitan. The City is a member agency of Metropolitan. Groundwater production accounts for 70 to 77 percent of the water supply and Metropolitan-imported water supplies provide the remaining 23 to 30 percent. The City also receives recycled water from OCWD.

OCWD Groundwater

Historically, local groundwater has been the cheapest and most reliable source of supply for the City. The City draws water from the OC Basin. The OCWD regulates groundwater levels in the OC Basin within its management area by regulating the annual amount of pumping. The OC Basin has been operated within its sustainable yield for more than 10 years without degrading water quality, reducing storage, or lowering groundwater levels. In addition, the OC Basin has not been in conditions of critical overdraft. The OC Basin storage capacity is estimated to be 66 million acre-feet (AF), of which, only a fraction is available for use to prevent against physical damage to the OC Basin, such as seawater intrusion or land subsidence. According to OCWD's Engineer's Report for fiscal year 2018/2019, the City used 25,512.4 AF of groundwater and 7,743.0 AF of supplemental water in the 2018–2019 water year.

OCWD manages the OC Basin through the Basin Production Percentage (BPP), which is determined each water year. The BPP is set based on groundwater conditions, availability of imported water supplies, water year precipitation, surface area (SAR) runoff, and basin management objectives. The BPP represents an established percentage identifying the amount of groundwater all pumpers in the OC Basin can pump without paying a "pumping tax" or Basin Equity Assessment (BEA) to OCWD. The BEA is an additional fee paid on each AF of water pumped above the BPP, making the total cost of that additional water equal to the higher cost of imported water from Metropolitan.

Figure 5.18-4 - Existing Water System Improvement Projects



Source: FUSCOE Engineering, 2020

5. Environmental Analysis
UTILITIES AND SERVICE SYSTEMS

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Over the recent past, production capability of the OC Basin has increased because of increased wastewater reclamation at the GWRS in Fountain Valley. The GWRS, which is designed to turn wastewater into drinking water, is one of the most technologically advanced wastewater treatment plants in the world. A treatment plant expansion of 30 mgd was recently put online by OCWD, increasing the recharge capacity of the GWRS to 100 mgd. This equates to the recycling of over 110,000 acre-feet per year (AFY) of wastewater back into the OC Basin for future extraction and potable use. A final expansion of the treatment system has been designed and currently under construction to expand to a capacity of 130 mgd. Expansion projects to the GWRS increase local water supply reliability and ensure low-cost water supplies throughout northern Orange County, including the City of Santa Ana.

Metropolitan Imported Water

The City of Santa Ana is one of only three retail member agencies of Metropolitan in Orange County. As a member agency, pursuant to the Metropolitan Act, the City has preferential rights to a certain percentage of water delivered to Metropolitan each year primarily from the State Water Project (SWP) and/or the Colorado River Aqueduct as well as other Metropolitan storage programs. Being a member agency of Metropolitan puts the City in a better position relative to receiving water directly from Metropolitan, as opposed to other agencies in Orange County that obtain their imported Metropolitan water through MWDOC. The main sources of water Metropolitan provides to the City include water from northern California delivered via the SWP and water from the Colorado River Basin delivered via the Colorado River Aqueduct.

Colorado River

Colorado River water is allocated and delivered to seven states in the U.S., including Colorado, Utah, Wyoming, New Mexico, Arizona, Nevada, and California. Mexico also has an allocation of 1.5-million AF along the Colorado River each year.

California's urban water allocation is managed by Metropolitan and imported from the Colorado River via the Colorado River Aqueduct (CRA). The CRA includes supplies from the implementation of the Quantification Settlement Agreement (QSA) and related agreements to transfer water from agricultural agencies in Imperial County to urban uses throughout Southern California, including Los Angeles, Orange County, and San Diego. The 2003 QSA enabled California to implement major Colorado River water conservation and transfer programs, stabilizing water supplies for 75 years and reducing the state's demand on the river to its 4.4 million AF entitlement. Colorado River transactions are potentially available to supply additional water up to the CRA capacity of 1.25 million AF on an as-needed basis.

California is apportioned the largest allocation on the river of 4.4 million AF of water from the Colorado River each year plus one-half of any surplus that may be available for use collectively in Arizona, California, and Nevada. In addition, California has historically been allowed to use Colorado River water apportioned to but not used by Arizona or Nevada. Metropolitan has a basic entitlement of 550,000 AFY of Colorado River water, plus surplus water up to an additional 662,000 AFY if certain conditions exist. The remainder of California's allocation goes to Imperial County, primarily to the Imperial Irrigation District, and is used mainly for agriculture production.

Over the past 19 years (2000–2018), there have only been three years when the Colorado River flow has been above average. On May 20, 2019, the Department of the Interior, Bureau of Reclamation and representatives from all seven Colorado River Basin states signed completed drought contingency plans for the upper and lower Colorado River basins. These completed plans are designed to reduce risks from ongoing drought and protect the single-most important water resource in the western United States. In addition to the voluntary reductions and other measures to which the basin states agreed, Mexico has also agreed to participate in additional measures to protect the Colorado River Basin.

State Water Project

The SWP collects water from rivers in Northern California and redistributes it to the water-scarce but populous central and southern portions of California through a network of aqueducts, pumping stations, and power plants. Approximately 70 percent of the water provided by the SWP is used for urban areas and industry in southern California and the San Francisco Bay Area, and 30 percent is used for irrigation in the Central Valley. The availability of water supplies from the SWP can be highly variable. A wet water year may be followed by a dry water year, which restricts the amount of water that can be delivered throughout California.

The Sacramento-San Joaquin River Delta (Delta) is key to the SWP's ability to deliver water to its agricultural and urban contractors. The Delta faces many challenges concerning its long-term sustainability such as climate change posing a threat of increased variability in floods and droughts. Sea level rise complicates efforts in managing salinity levels and preserving water quality in the Delta to ensure a suitable water supply for urban and agricultural use. Furthermore, other challenges include continued subsidence of Delta islands, many of which are below sea level, and the related threat of a catastrophic levee failure as the water pressure increases, or as a result of a major seismic event.

Metropolitan's Board approved a Delta Action Plan in June 2007 that provides a framework for staff to pursue actions with other agencies and stakeholders to build a sustainable Delta and reduce conflicts between water supply conveyance and the environment. In April 2015, the Brown Administration announced California WaterFix, as well as a separate ecosystem restoration effort called California EcoRestore. Together, the California WaterFix and California EcoRestore will make significant contributions toward achieving the coequal goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The WaterFix is aimed at making physical and operational improvements to the SWP system in the Delta necessary to restore and protect ecosystem health, south-of-Delta SWP water supplies, and water quality. The WaterFix includes the construction of two tunnels up to 150 feet below ground and three new intakes, each with 3,000 cubic-feet per second (cfs) capacity and an average annual yield of 4.9 million AF designed to protect California's water supplies. These proposed upgrades would provide protection against water supply disruption from failure of aging levees due to sea-level rise, earthquakes, and flood events.

In May 2019, the Newsom Administration revised their stance on the WaterFix in response to multiple legal challenges. The revised project would include the construction of one tunnel instead of the previously proposed two-tunnel system. At this time, the DWR and the U.S. Bureau of Reclamation (BOR) have withdrawn their water rights petition (the WaterFix Petition) and the project has been postponed indefinitely.

Recycled Water

The City depends on OCWD for its recycled water supply for non-potable uses such as irrigation. OCWD provided 352 AF of recycled water to the City of Santa Ana in 2015 as part of the Green Acres Project (GAP). OCWD owns and operates the GAP, a water recycling system that provides up to 8,400 AFY of recycled water as an alternate source of water that is mainly delivered to parks, golf courses, greenbelts, cemeteries, and nurseries in the cities of Costa Mesa, Fountain Valley, Newport Beach, and Santa Ana. The City maintains an agreement with OCWD to supply GAP water to customers where available. It is anticipated that recycled water supplied to the City will maintain around 300 AFY through 2040.

Existing Water Demand

Approximately 67 percent of the City's water demand is residential, including single-family and multifamily residential units. Commercial land uses, including dedicated landscape, accounts for the remaining 33 percent of the total demand. As shown in Table 5.18-7, there was a decrease in potable water supplied to the City in 2015 as to what was predicted to be delivered in the 2010 UWMP (47,800 AF) by approximately 23 percent. This is likely due to SBx7-7, which requires the State of California to reduce urban water use by 20 percent by the year 2020. Similarly, the Executive Order mandated by California Governor Brown in April 2015 in response to the drought that started in 2011 further required a collective reduction in statewide urban water use of 25 percent, which would also reduce Citywide demands. In addition, UWMPs are typically developed in a conservative manner and tend to overestimate future water demands.

Table 5.18-7 2015 Potable Water Demand

	2010 UWMP Projected 2015 Demand (acre-feet)	2015 UWMP Demand (acre-feet)
Single-Family	18,368	14,084
Multifamily	13,563	10,399
Other (CII)	15,684	12,025
Landscape	185	147
Total	**47,800**	**36,656**

Source: Fuscoe 2020b.

Per SBx7-7, the City must determine baseline water use during their baseline period and water use targets for the years 2015 and 2020 to meet the state's water reduction goal. The City's 2015 target was 123 gallons per capita per day (gpcd) and the 2020 target is 116 gpcd. The 2015 UWMP reported that the City has already met both the 2015 and 2020 water use targets with an actual use in 2015 of 83 gpcd. This is likely due to increased conservation as required by the Governor's Executive Order during severe drought conditions throughout California. The City's water demand has been decreasing in recent years due to the combination of the Governor's Executive Order and SBx7-7 goals. More recently, the City has documented a per-capita usage of 66 gpcd, which highlights the continued conservation efforts.

A summary of the projected demands of water for the City is shown in Table 5.18-8. It is projected that water demands will increase from 37,008 AF in 2015 to 40,036 AF in year 2040 representing an increase of 3,028 AF.

These estimates are approximately 10,000 AF less than what was predicted in the 2010 UWMP further highlighting the conservative nature of UWMP preparation.

Table 5.18-8 City of Santa Ana Projected Water Supplies (AF)

	2015	2020	2025	2030	2035	2040
Potable Water	36,656	36,678	39,397	39,669	39,658	39,716
Recycled Water	352	320	320	320	320	320
Total Supply	**37,008**	**36,998**	**39,717**	**39,989**	**39,978**	**40,036**

Source: Santa Ana 2016.

Water Supply Reliability

Overall, the City has documented that it is 100 percent reliable for a normal year, a single-dry year, and multiple-dry year events from 2020 through 2040. Tables 5.18-9 through 5.18-11 show the City's water demand and supply through these conditions.

Table 5.18-9 City of Santa Ana Projected Normal Year Supply and Demand (AF)

	2020	2025	2030	2035	2040
Supply Total	36,998	39,717	39,989	39,978	40,036
Demand Total	36,998	39,717	39,989	39,978	40,036
Difference	**0**	**0**	**0**	**0**	**0**

Source: Santa Ana 2016.

Table 5.18-10 City of Santa Ana Projected Single Dry Year Supply and Demand (AF)

	2020	2025	2030	2035	2040
Supply Total	39,218	42,100	42,388	42,377	42,438
Demand Total	39,218	42,100	42,388	42,377	42,438
Difference	**0**	**0**	**0**	**0**	**0**

Source: Santa Ana 2016.

Table 5.18-11 City of Santa Ana Projected Multiple Dry-Year Event Supply and Demand (AF)

		2020	2025	2030	2035	2040
First Year Supply	Supply Total	39,218	42,100	42,388	42,377	42,438
	Demand Total	39,218	42,100	42,388	42,377	42,438
	Difference	**0**	**0**	**0**	**0**	**0**
Second Year Supply	Supply Total	39,218	42,100	42,388	42,377	42,438
	Demand Total	39,218	42,100	42,388	42,377	42,438
	Difference	**0**	**0**	**0**	**0**	**0**
Third Year Supply	Supply Total	39,218	42,100	42,388	42,377	42,438
	Demand Total	39,218	42,100	42,388	42,377	42,438
	Difference	**0**	**0**	**0**	**0**	**0**

Source: Santa Ana 2016.

Furthermore, the 2015 Metropolitan UWMP stated that Metropolitan would be able to meet the demands of its member agencies, including the City of Santa Ana, through 2040. Therefore, imported water demands for the City are projected to be met through the 20-year requirements of SB 610 and beyond. The City of Santa Ana 2015 UWMP also confirmed the ability of the local supplies and the OC Basin to meet the growing demands of the City.

5.18.2.2 THRESHOLDS OF SIGNIFICANCE

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

U-1 Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

U-2 Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.

5.18.2.3 REGULATORY REQUIREMENTS AND GENERAL PLAN UPDATE POLICIES

Regulatory Requirements

RR U-5 Any development implemented under the General Plan Update shall abide by the water conservation and efficiency requirements detailed in Chapter 8, Article XVI, Chapter 39, Article VI and Chapter 41, Article XVI of the Santa Ana Municipal Code.

RR U-6 Water connection fees shall be paid in accordance with Chapter 39, Article II of the City's Municipal Code and plumbing shall be installed in compliance with Chapter 8, Article III.

RR U-7 Water Supply Assessments and written verifications shall be prepared for any development implemented under the General Plan Update that meets the criteria of Senate Bill 610 or Senate Bill 221.

General Plan Update Policies

The following are relevant policies of the Santa Ana GPU, which may contribute to reduce potential impacts to water supply and distribution facilities as a result of implementation of the proposed project.

Economic Prosperity Element

- **Policy 2.9. Energy Conservation:** Collaborate with utility providers and regional partners to encourage business and industry to improve performance in energy efficiency, water conservation, and waste reduction.

Public Services Element

- **Policy 3.7. Emergency Connections:** Maintain emergency connections with local and regional water suppliers in the event of delivery disruption.
- **Policy 3.8. Conservation Strategies:** Implement cost-effective conservation strategies and programs that increase water use efficiency.
- **Policy 3.12. Sewer and Water.** Sewer and Water. Maintain and upgrade sewer and water infrastructure through impact fees from new development and exploring other funding sources.

Open Space Element

- **Policy 1.6. Sustainable Landscape.** Promote citywide use of drought tolerant landscape and development practices for wise water use and energy consumption.

Conservation Element

- **Policy 4.1. Water Use.** Encourage and educate residents, business owners, and operators of public facilities to use water wisely and efficiently.
- **Policy 4.2. Landscaping.** Encourage public and private property owners to plant native or drought-tolerant vegetation.
- **Policy 4.3. Recycled Water Systems.** Continue to coordinate with the Orange County Water District, Orange County Sanitation District, and developers for opportunities to expand use of reclaimed water systems.
- **Policy 4.4. Irrigation Systems.** Promote irrigation and rainwater capture systems that conserve water to support a sustainable community.

- **Policy 4.5. Water Supply.** Continue to collaborate with Orange County Water District and Metropolitan Water District to ensure reliable, adequate, and high-quality sources of water supply at a reasonable cost.

5.18.2.4 ENVIRONMENTAL IMPACTS

Principles Governing CEQA Analysis of Water Supply

In *Vineyard Area Citizens for Responsible Growth, Inc., v. City of Rancho Cordova* (2007) 40 C4th 412, CR3d 821, the California Supreme Court articulated the following principles for analysis of future water supplies for development projects subject to CEQA:

- An adequate environmental impact analysis for a long-range development plan cannot be limited to the water supply for the first stage of development. While CEQA's tiering principles allow an agency to defer analysis of certain details of later phases of long-term projects until those phases are considered for approval, CEQA's disclosure requirement "is not satisfied by simply stating information will be provided in the future." 40 C4th at 441

- Future water supplies identified and analyzed in an EIR must be reasonably likely to prove available; speculative sources and unrealistic paper allocations do not provide an adequate basis for decision making under CEQA. 40 C4th at 432

- When, despite a full analysis, "it is impossible to confidently determine that anticipated future water sources will be available," CEQA requires some discussion of possible replacement or alternative supply sources, and of the environmental consequences of resorting to those sources. 40 C4th at 432

- An EIR for a land use plan need not demonstrate that the water supply for the project is assured through enforceable agreements with a provider and built or approved treatment and delivery facilities. To interpret CEQA as requiring firm assurances of future water supplies at early stages of the planning process would be inconsistent with the water supply statutes, which call for an assured supply only at the end of the approval process. 40 C4th at 432

- The burden of identifying likely water sources for a project varies with the stage of project approval involved, with the necessary degree of confidence in actual availability for approval of a conceptual plan being "much lower than for issuance of building permits." 40 C4th at 434

- The "ultimate question under CEQA is not whether an EIR establishes a likely source of water, but whether it adequately addresses the reasonably foreseeable impacts of supplying water to the project." 40 C4th 434

It should be noted that the *Vineyard* case concerned a specific development project and not a general plan update. The court in *Watsonville Pilots Ass'n vs. City of Watsonville* (2010) 183 CA4th 1059, 1092, 108 CR3d 577, held that it is not necessary for an EIR on a general plan to establish a likely source of water. Relying on the principles outlined in the California Supreme Court's opinion in *Vineyard*, the court ruled that because general plan EIRs are conceptual, they need only address:

- The reasonably foreseeable impacts of supplying water to the project,

- Note any uncertainties that prevent identification of future water sources,
- Identify and describe alternatives,
- Discuss the environmental impacts of those alternatives.

Impact Analysis

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

Impact 5.18-3: Development pursuant to the GPU would require or result in the relocation or construction of new or expanded water facilities. [Threshold U-1]

Under the proposed land use changes, water flows would increase throughout the City of Santa Ana and its focus areas due to increases in dwelling units and commercial land uses. As shown in Table 5.18-6, the City currently has 78,792 dwelling units and 67,118,596 square feet of non-residential uses. Compared to the proposed dwelling units and non-residential square footage as shown in Table 5.18-12, a total increase of 36,261 dwelling units and an increase of approximately 5,849,220 square feet of non-residential uses are proposed. Table 5.18-12 shows the proposed water demand associated with each land use change, using the same methodology as for the existing conditions. Water demand for the proposed GPU were projected using the same methodology as used for existing water demand; however, demand factors for residential land uses are based on 2025–2040 demand factors from the MWDOC Orange County Water Reliability Study to reflect buildout conditions.

Table 5.18-12 Average Water Demand – Existing Compared to GPU

Area	GPU - Number of Dwelling Units	GPU - Non-Residential Square Feet	Proposed Water Demand (gpd)	Existing Water Demand (gpd)	Change in Water Demand (gpd)	% Change
Focus Area						
West Santa Ana Boulevard	3,920	2,808,805	996,756	880,807	+115,949	13.6%
South Bristol Street	5,492	5,082,641	1,335,183	136,957	+1,198,226	857%
Grand Avenue/17th Street	2,283	703,894	475,779	202,362	+273,417	135%
South Main Street	2,308	946,662	597,029	600,682	- 3,653	-0.6%
55 Freeway/Dyer Road	9,952	6,142,283	2,243,399	582,841	+1,660,558	666%
Focus Area Total	**23,955**	**15,684,285**	**5,648,146**	**2,403,648**	**+3,244,498**	**135%**
Remainder of City						
All Other Areas of City	91,098	57,283,531	30,458,068	29,403,648	+1,054,420	3.6%
City of Santa Ana Total	**115,053**	**72,967,816**	**36,106,214**	**31,833,589**	**+4,272,625**	**13.4%**

Source: Fuscoe 2020b.
Notes:
See Appendix C of the *City of Santa Ana General Plan Update Infrastructure Technical Report for Hydrology, Sewer, Water, and Water Quality* for water demand calculations.
gpd: gallons per day

Full GPU implementation has the potential to increase water demand by 4.27 mgd within the city. Water demand across all focus areas are anticipated to increase by 3.24 mgd, representing approximately 75 percent of the projected city-wide increase in water demand. Water demand would primarily be generated from additional dwelling units within the focus areas and specific plan/special zoning areas.

Water Distribution System

The City currently has 19 identified water main replacement projects, 6 groundwater well improvement projects, and 1 pump station improvement project throughout, as identified in the 2017 Water Master Plan. Four of the five focus areas have water main improvements identified as summarized below and shown on Figure 5.18-4:

- **West Santa Ana Boulevard Focus Area:** West Santa Ana Boulevard Focus Area includes Nos. 10 and 21 water main replacement projects as well as one groundwater well improvement project.
- **Grand Avenue/17th Street Focus Area:** The Grand Ave/17th Street Focus Area includes Nos. 5 and 19 water main replacement projects.
- **South Main Street Focus Area:** The South Main Street Focus Area includes Nos. 9, 11, 23, and 24 water main replacement projects.
- **South Bristol Street Focus Area:** The South Bristol Street Focus Area includes Nos. 8 and 11 water main replacements projects.

Table 5.8-13 compares the increase in water demand for the proposed GPU in comparison to the current General Plan. This analysis is based on total dwelling units and commercial square footage and does not differentiate between single-family and multifamily water demand factors.

Table 5.18-13 Water Flow Changes, Current General Plan to Proposed GPU

Area	Change in Housing Units, Current GP to Proposed (dwelling units)	Change in Commercial Areas, Current GP to Proposed (square feet)	Change in Sewer Flows (gpd)
Focus Area			
West Santa Ana Boulevard	+ 1,308	- 38,106	+ 246,333
South Bristol Street	+ 2,232	+ 946,213	+ 478,385
Grand Avenue/17th Street	+ 1,766	- 1,715,794	+ 237,067
South Main Street	+ 667	- 1,481,837	+41,684
55 Freeway/Dyer Road	+ 7,222	- 376,333	+ 1,350,381
Focus Area Total	**+ 13,195**	**- 2,665,857**	**+2,354,041**
Remainder of City			
All Other Areas of City	+ 0	+ 0	+ 0
Citywide Total	**+ 13,195**	**-2,665,857**	**+2,354,041**

Source: Fuscoe 2020a.

Under buildout of the proposed GPU, water demand would increase across all focus areas, potentially creating deficiencies or necessitating the need for improvement projects not identified in the 2017 WMP. However,

major deficiencies from increased demand are not anticipated, as the 2017 WMP found that the distribution system was largely hydraulically sound. Improvement projects as a result of deteriorated or aged pipes are anticipated to constitute the majority of future water infrastructure projects. Through its planning and CIP mechanisms, the City would have adequate capacity for the proposed increases in water flows across the City under implementation of the GPU and would be able to serve the additional dwelling units and commercial square footage proposed. This has been confirmed with City staff (Rosas 2020).

Furthermore, GPU policies encourage the maintenance and upgrade of water infrastructure through impact fees from new development, and the exploration of other funding sources. The policies also promote the citywide use of drought-tolerant landscape and encourage public and private property owners to plant native or drought-tolerant vegetation. Therefore, impacts from proposed GPU buildout would be less than significant.

Level of Significance Before Mitigation: With the implementation of RR U-5 though RR U-7 and Policy 3.12 (see Section 5.18.2.3), Impact 5.18-3 will be less than significant.

Impact 5.18-4: Water supply would be adequate to meet development pursuant to the GPU. [Thresholds U-4]

As UWMPs typically overestimate water demand projections, the City provided water use data to update water demand estimates since the 2015 UWMP. For each land use in the City of Santa Ana and its focus areas, water demand estimates were developed to provide a baseline condition and to allow for comparisons against any proposed land use changes. Water demands were estimated using the average gallons per capita water use estimate of 66 gpcd. This gpcd estimate was then multiplied by dwelling unit buildout projections and residents per dwelling-unit assumptions. Commercial water demand factors were provided from the City of Santa Ana Guidelines for Water and Sewer Facilities (2017). In addition, the City provided data for 2018/2019 water use from irrigation that was also used to establish a total baseline existing condition water demand for 2020.

Table 5.18-14 provides a summary of the existing condition water demand for the City. Detailed calculations are provided in the Water Supply and Demand Technical Report (see Appendix H-b).

Table 5.18-14 Existing Average Daily Water Demand

Land Use	Land Use	Residents Per / Dwelling Unit	Water Demand Factor	Water Demand (AFY)
Single-Family Residential	56,782 DUs	4.60	66 gpcd	19,323
Multifamily Residential	22,010 DUs	3.60	66 gpcd	5,862
Commercial	1,541 acres (67 million sf)	—	2,500 gpd/acre	4,318
Potable and Recycled Irrigation	—	—	—	1,648
Citywide Total	**78,792**	**—**	**67,118,596**	**31,151**

Source: Fuscoe 2020b.

Under existing conditions, average daily water demand is estimated at 31,151 AFY. Based on correspondence with City staff, the existing water demand estimate is within the range of actual water use based on 2018/2019 data, thereby confirming this methodology is appropriate for projecting water demand.

The 2015 UWMP projected water demand of 36,998 AFY in 2020 was based on previous population projections. This is nearly 6,000 AFY greater than actual water uses within the City for the same time frame. This is likely due to the conservative nature of UWMPs as well as ongoing water conservation efforts employed by the City to reduce potable water demand.

Under the proposed GPU, water demands would increase throughout the City due to the total increase of 36,261 dwelling units and increase of approximately 5,849,220 square feet of non-residential uses.

The methodology to estimate increases in water demand is similar to the methodology used for establishing the existing condition baseline. However, a 20-percent reduction factor was employed to the gpcd multifamily residential water demands to account for required reductions in water demands associated with new developments, including the California Green Building Code standards (e.g., mandatory low-flow toilets and efficient fixtures) as well as model-efficiency landscape guidelines. A factor of 53 gpcd was used to project multifamily water demand associated with the GPU. A slight decrease in single-family residences is anticipated; this decrease assumed 66 gpcd associated with higher usage, older homes. The City has noted that the reduction in per capita water used in the methodology has already been observed during recent years (2019–2020) and ranges between 44–58 gpcd (based on monthly water usage reporting requirements the City must forward to DWR). The commercial water demand factor of 2,500 gpd/acre remained consistent with existing water demand factors, although this approach is likely overestimated and therefore conservative.

Table 5.18-15 shows the proposed water demand associated with each land use change. Detailed calculations and associated exhibits are included in the Water Supply and Demand Technical Report (see Appendix H-b).

Table 5.18-15 Water Demand - Existing Compared to GPU

Land Use	Land Use	Residents Per Dwelling Unit	Water Demand Factor	Water Demands (AFY)
Single-Family Residential	-590 DUs	4.30	66 gpcd	-188
Multifamily Residential	+36,851 DUs	3.10	53 gpcd	6,761
Commercial	+134 acres (+5.85 million sf)	—	2,500 gpd/acre	376
			Citywide Total Projected Increase in Demand	**+6,950**
			Existing Total Demand	**31,151**
			Proposed GPU Total Demand	**38,101**

Source: Fuscoe 2020b.

Full implementation of the Santa Ana GPU has the potential to increase water demand by 6,950 AFY. Table 5.18-16 compares the 2015 UWMP water demand to the water demand calculated in Tables 5.18-4 and 5.18-15.

Table 5.18-16 Water Demand Comparison

Source	Water Demand Scenario	Water Demand Estimate (AFY)
Table 5.18-14	Existing	31,151
Table 5.18-15	Proposed GPU	38,101
2015 UWMP	Projected 2020 Water Demand (Normal – Multiple-Dry Year)	36,998–39,218
2015 UWMP	Projected 2040 Water Demand (Normal – Multiple-Dry Year)	40,036–42,438

Source: Fuscoe 2020b.

Under full GPU buildout, water demand would increase from approximately 31,151 AFY to 38,101 AFY. The 2015 UWMP projected a 2040 total water demand of 40,036 to 42,438 AFY (depending on climate conditions), which is greater than the total of 38,101 AFY associated with GPU implementation.

The 2018–2019 OCWD Engineer's report provides data on groundwater usage across its service area, including the City of Santa Ana. Water production for the City consisted of 77 percent groundwater for the 2018–2019 year, with the remaining 23 percent consisting of imported and recycled water. Total groundwater production for the 2018–2019 year was 302,756 AF, which falls within OCWD's sustainable groundwater management goals. Population within OCWD's service area is expected to increase from the current 2.28 million people (based on U.S. Census 2010 demographic data) to approximately 2.59 million people by the year 2035. This population growth is expected to increase water demands from the current 393,222 AFY to 447,000 AFY in 2035 (a water demand projection that takes into consideration future water conservation savings). This yields an anticipated increase in water demand of 53,779 AFY. The proposed increase of 6,950 AFY under implementation of the Santa Ana GPU is well within the planned increase in water demands from OCWD projections.

Table 5.18-17 shows OCWD's projected future water budget under average hydrologic conditions. This projection considers several possible new sources of water recharge supply: the final expansion of GWRS, recharge with recycled water produced by a proposed Metropolitan Regional Recycled Water Supply Program, and desalinated ocean water. The future projection accounts for these new water supplies as an increase in total inflow to the basin. In the case where one or more of the new water supplies is not available in the future, the amount of groundwater production would be reduced in order to create a balanced water budget.

Table 5.18-17 Projected Water Budget for OCWD's Management Area

Flow Component	Acre-Feet
Inflow	
Santa Ana River baseflow	52,000
Santa Ana River stormflow	52,000
GWRS recharge in Forebay	104,000
Imported Water/Metropolitan	65,000
Desalinated Ocean Water	53,000
Talbert Barrier injection	30,000
Alamitos Barrier injection in Orange County	2,000
Incidental recharge	62,000
Total Inflow	**420,000**
Outflow	
Groundwater Production	420,000
Total Outflow	**420,000**
Change in Storage	**0**

Source: OCWD 2017.

As shown in Table 5.8-17, the OC Basin would have enough supply to meet demand. The OC Basin has been operated within its sustainable yield for more than 10 years without degrading water quality, reducing storage, or lowering groundwater levels and will continue to be managed sustainably by OCWD.

In addition, Metropolitan's 2015 UWMP stated that Metropolitan would be able to meet the demands of its member agencies, including the City of Santa Ana, through 2040. A 2014 Purchase Order between the City and Metropolitan further establishes adequate water supplies to meet current and future demands. The Purchase Order sets terms for maximum deliveries of imported water over a 10-year period, from January 1, 2015, through December 31, 2024. Among the stipulations of the purchase agreement was a maximum annual delivery of 19,617 AFY. As noted in the OCWD 2018–2019 Engineer's Report, the City of Santa Ana utilized 25,512.4 AF of groundwater further supporting the approximate 75 percent groundwater to 25 percent imported water supply portfolio for the City. As noted in the City's UWMP, this ratio of groundwater and imported water is anticipated to continue through 2040. Therefore, an available 11,874 AF of water delivered by Metropolitan is still available if ever needed. This surplus alone is sufficient to meet the proposed increase in demands of 6,950 AFY under implementation of the proposed GPU. When combined with anticipated increases in OCWD groundwater supply capacity, it is not anticipated that the proposed increase in water demands will adversely impact regional water supplies.

Therefore, the proposed water demand increases as a result of the Santa Ana GPU are within the planned supplies from the City, OCWD, and Metropolitan during normal-dry and multiple-dry year scenarios. Furthermore, GPU policies encourage business and industry to improve their performance in water conservation, promote the implementation of cost-effective conservation strategies and programs that increase water-use efficiency, and encourage and educate residents, business owners, and operators of public facilities to use water wisely and efficiently. Policies also promote the maintenance of emergency connections with local and regional water suppliers in the event of delivery disruption, the maintenance and upgrade of water

infrastructure through impact fees from new development, and the exploration of other funding sources. The policies also promote the citywide use of drought-tolerant landscape and encourage public and private property owners to plant native or drought-tolerant vegetation. Therefore, impacts as a result of proposed GPU buildout would be less than significant.

Level of Significance Before Mitigation: With the implementation of RR U-5 and RR U-7 and Policies 2.9, 3.7, 3.8, 4.3, 1.6, 4.1, 4.2, 4.3, 4.4, and 4.5 (see Section 5.18.2.3), Impact 5.18-4 will be less than significant.

5.18.2.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: Impacts 5.18-3 and 5.18-4.

5.18.2.6 MITIGATION MEASURES

No mitigation measures are required.

5.18.2.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts 5.18-3 and 5.18-4 would remain less than significant.

5.18.3 Storm Drainage

5.18.3.1 ENVIRONMENTAL SETTING

Regulatory Background

Regional

Orange County Regional Municipal Separate Stormwater Sewer System (MS4) Permit

In May 2009, the Santa Ana RWQCB re-issued the North Orange County MS4 Stormwater Permit as WDR Order R8-2009-0030 (NPDES Permit No. CAS618030) to the County of Orange, the incorporated cities of Orange County, and the Orange County Flood Control District (OCFCD) within the Santa Ana Region. Pursuant to this "Fourth-Term" MS4 Permit, the Co-permittees were required to update and implement a Drainage Area Management Plan (DAMP) for its jurisdiction, as well as Local Implementation Plans (LIPs), which describe the Co-permittees' urban runoff management programs for their local jurisdictions.

Under the City's LIP, land development policies pertaining to hydromodification and low-impact development (LID) are regulated for new developments and significant redevelopment projects. The term "hydromodification" refers to the changes in runoff characteristics from a watershed caused by changes in land use condition. More specifically, hydromodification refers to the change in the natural watershed hydrologic processes and runoff characteristics (i.e., interception, infiltration, overland flow, interflow, and groundwater flow) caused by urbanization or other land use changes that result in increased stream flows and sediment transport. The use of LID BMPs in project planning and design is to preserve a site's predevelopment hydrology by minimizing the loss of natural hydrologic processes such as infiltration, evapotranspiration, and

runoff detention. LID BMPs try to offset these losses by introducing structural and non-structural design components that restore these water quality functions into the project's land plan. These land development requirements are detailed in the county-wide Model Water Quality Management Plan (WQMP) and Technical Guidance Document (TGD), approved in May 2011, which cities have incorporated into their discretionary approval processes for new development and redevelopment projects.

The LID hierarchy requires new developments and re-developments to implement BMPs under the LID hierarchy, as described in the TGD. The LID hierarchy requires new projects to first infiltrate, then harvest and reuse, then biofilter stormwater runoff from their project site depending on site constraints. New projects and redevelopments within the plan area will follow the set hierarchy of BMP selection.

Local

City of Santa Ana Storm Drain Master Plan

The purpose of the Master Plan of Storm Drainage (MPD) is to provide comprehensive long-range planning for the implementation and development of drainage facility improvements, determine the cost of implementing such facilities, and discuss funding priorities of the improvements within the City of Santa Ana. Main collector elements (storm drain facilities 36 inches or larger) within the City were modeled with the goal of identifying issues related to existing storm drain facilities. Flooding results for the 10-, 25-, and 100-year storm conditions were compared to County of Orange design protection levels for streets to determine deficient segments and locations (Michael Baker 2015).

City of Santa Ana Municipal Code

Chapter 8 - Article III (Plumbing Code) of the Santa Ana Municipal Code incorporates the 2016 California Plumbing Code by reference.

5.18.3.2 EXISTING CONDITIONS

Storm Drain System

Storm drain lines throughout the plan area include both City and OCFCD drainage facilities to convey stormwater runoff. All underground lines are under jurisdiction of the City and all the open flood control channels are maintained by OCFCD. One open trapezoidal channel runs west from Harbor Boulevard to south of 1st Street is owned and maintained by the City.

The City storm drain infrastructure feeds to a series of OCFCD regional drainage channels. These channels and their respective drainage areas divide the plan area into seven separate regional watersheds (Michael Baker 2015). The regional watersheds, named after the drainage channel that they flow to, are as follows:

- **Wintersburg/Garden Grove:** Located in the northwest corner of the City, drains to Anaheim Bay – Huntington Harbor Watershed. Contains portions of the West Santa Ana Boulevard Focus Area.
- **Greenville-Banning:** Located in the southwest of the City, drains to the Santa Ana River Watershed. Contains portions of the West Santa Ana Boulevard Focus Area.

- **Gardens:** Located in the southern portion of the City, drains to the Newport Bay Watershed. Contains portions of the West Santa Ana Boulevard Focus Area.
- **Santa Ana:** Located in the northern portion of the City, drains to the Santa Ana River Watershed. Contains portions of the 17th Street and Grand and West Santa Ana Boulevard Focus Areas.
- **Delhi:** Located in the southern portion of the City, drains to the Newport Bay Watershed. Contains the South Main Focus Area and portions of the 17th Street and Grand and West Santa Ana Boulevard Focus Areas.
- **Santa Fe:** Located in the northeastern corner of the City, drains to the Newport Bay Watershed. Contains portions of the 17th Street and Grand Focus Area.
- **Lane-Barranca:** Located in the southeastern corner of the City, drains to the Newport Bay Watershed. Contains the 55 Freeway and Dyer Road Focus Area.

Additional major drainage features within the City include trunk lines that outlet to the larger drainage channels. Storm drain facilities serving the focus areas are in Table 5.18-18.

Table 5.18-18 Existing Drainage Facilities within the Focus Areas

Focus Area	Acreage	Primary Drainage Facility
West Santa Ana Boulevard	604	12”-60” City Storm Drain Lines OCFCD Drainage Channels Santa Ana River (OCFCD Maintained)
17th Street and Grand	81	36”-81” City Storm Drain Lines
South Main Street	451	12”-84” City Storm Drain Lines
South Bristol Street	232	12”-72” City Storm Drain Lines OCFCD Drainage Channel (Gardens)
55 Freeway and Dyer Road	449	12”-48” City Storm Drain Lines OCFCD Drainage Channel (Lane-Barranca)

Source: Fuscoe 2020a.

Figure 5.9-3, *Existing Storm Drain Recommended Improvements*, shows the existing storm drain system throughout the City and the focus areas.

Storm Drain Master Plan

The City of Santa Ana’s MPD recommended improvements for each regional watershed within the plan area. Top recommended improvements are shown in Table 5.18-19.

Table 5.18-19 Plan Area Recommended Storm Drain Improvements

Improvement Number	Regional Watershed	Improvement
1	Delhi	Improve County Delhi Channel between Alton and Sunflower
2	Gardens	Improve County Gardens Channel between Edinger and Sunflower
3	Santa Ana	Improve City system along 17th Street between Santa Ana River and west of Flower St
4	Santa Fe	Improve City system along Grand Avenue between Santa Clara and the Santa Fe Channel
5	Santa Fe	Improve City system along Tustin Avenue between 17th Street and the Santa Fe Channel
6	Santa Fe	Improve City system between Macarthur and Sunflower
7	Greenville Banning	Improve the City system between Alton and Macarthur connecting to the Lane Channel
8	Santa Ana	Improve City system along Flower between Santa Clara and Santiago Creek
9	Santa Ana	Improve City system along Fairview between Trask and the Santa Ana River
10	Wintersburg	Improve City system along Rosita between Hazard Avenue and the Wintersburg Channel

Source: Fuscoe 2020a.

The MPD recommends that all improvements are implemented beginning at the most downstream portion of the target area. All recommendations made in the MPD are done so at a master planning level. For individual projects, specific modeling/analysis may be necessary. Of the 10 improvement projects identified in the MPD, one project (Improvement 7) was included in the 2018/2019 City of Santa Ana's CIP. Figure 5.9-3 illustrates recommended storm drain improvement areas in the City and their associated improvement numbers.

The 2018/2019 CIP includes a stormwater capture project located at Mabury Park. This project includes the construction of a large bioretention basin to slow and treat flows draining the Newport Bay. In addition, the City provides frequent updates to the status of their CIP projects for sewer, water, and storm drain systems. The following projects are listed on the October–March 2020 CIP quarterly executive summary schedule:

- D-03 Channel Improvements at Alton Avenue
- Civic Center Storm Drain Lift Station
- C-5-F Channel Repair between Newhope and Harbor
- First Street Undercrossing Stormwater Lift Station
- Warner Avenue Storm Drain Improvements (Ph 1) (Main Street to Oak Street)

Most of the projects listed above are either going through the design phase or construction phase as of March 2020.

Orange County Public Works 7-Year CIP

Orange County Public Works' (OCPW's) 7-Year Capital Improvement Plan covers OCFCD drainage facilities, Road, Bridge, Flood, and Bikeway Projects for Fiscal Years 2019/2020–2025/2026. There was one project within the GPU area downstream of the 55 Freeway/Dyer Road Focus Area included in the 2018/2019 CIP that is estimated to be concluded in June 2020:

Lane Channel (FY 2018/2019) – Demolish existing damaged concrete-lined channel and replace with channel lining constructed with current design standard criteria.

5.18.3.3 THRESHOLDS OF SIGNIFICANCE

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

U-1 Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

5.18.3.4 REGULATORY REQUIREMENTS AND GENERAL PLAN UPDATE POLICIES

Regulatory Requirements

RR U-8 Storm drain shall be installed in compliance with Chapter 8, Article III, of the Santa Ana Municipal Code.

RR-HYD-1 All development pursuant to the General Plan Update shall comply with the requirements of the Construction General Permit (Order No. 2012-0006-DWQ) for stormwater discharges associated with construction activity. Compliance requires filing a Notice of Intent (NOI), a Risk Assessment, a Site Map, a Stormwater Pollution Prevention Plan (SWPPP) and associated best management practices (BMPs), an annual fee, and a signed certification statement.

RR HYD-4 All development pursuant to the General Plan Update shall comply with the requirements of the Orange County MS4 Permit (Order R8-2009-0030, NPDES No. CAS618030, as amended by Order No. R8-2010-0062). The MS4 Permit requires new development and redevelopment projects to:

- Control contaminants into storm drain systems
- Educate the public about stormwater impacts
- Detect and eliminate illicit discharges
- Control runoff from construction sites
- Implement best management practices and site-specific runoff controls and treatments for new development and redevelopment

General Plan Update Policies

The following are relevant policies of the Santa Ana GPU, which may contribute to reduce potential impacts to storm drainage facilities as a result of implementation of the proposed project.

Public Services Element

- **Policy 3.4. Drainage Facilities.** Expand and maintain storm drain facilities to accommodate the needs of existing and planned development.

- **Policy 3.5. Green Infrastructure.** Incorporate sustainable design and Low Impact Development (LID) techniques for storm water facilities and new development to achieve multiple benefits, including enhancing preserving and creating open space and habitat and improving runoff water quality.

Safety Element

- **Policy 1.3. Storm Drain Infrastructure.** Update the Drainage Master Plan to prioritize improvements to existing system deficiencies, and plan for infrastructure needs that support the General Plan land use vision.

- **Policy 1.7. Surface Water Infiltration.** Encourage site drainage features that reduce impermeable surface area, increase surface water infiltration, and minimize surface water runoff during storm events on private and public developments.

5.18.3.5 ENVIRONMENTAL IMPACTS

Impact Analysis

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

Impact 5.18-5: Existing and/or proposed stormwater drainage facilities would be able to accommodate proposed development pursuant to the GPU. [Threshold U-1]

The City is largely built out and there are no major areas within the City that are undeveloped. However, in some areas, single-family homes and vacant lots would be redeveloped into higher-intensity uses that could increase peak-flow runoff. Impact 5.9-3 describes these areas in addition to planned storm drain improvement projects. These improvement projects include:

- Improvements to the Garden Channel between Edinger and Sunflower.

- Improvements along Grand Avenue between Santa Clara and the Santa Fe Channel within the regional Santa Fe Watershed.

- Improvements to Lane Channel, which includes demolishing and replacing a portion of damaged concrete-lined channel. These improvements are anticipated to be finished in June 2020 and will serve to improve the hydrologic capacity of downstream areas.

Prioritizing these improvements may be beneficial to ensure no hydrology impacts result from the future developments proposed under the GPU. Additionally, the City and County have policies in place for reviewing and permitting new developments. As part of the development process, detailed hydrology studies will be required and if necessary, on-site detention systems within the development would be required to match existing peak flows, thereby eliminating any potential increase in runoff. In addition, the City will continue monitoring its storm drain system for any segments that need immediate improvements and will regularly update its MPD

to adequately plan for future drainage needs. OCPW also updates their CIP each year to ensure regional drainage facilities are functioning.

Furthermore, GPU policies require expanding and maintaining storm drain facilities to accommodate the needs of existing and planned development in addition to updating the Drainage Master Plan to prioritize improvements to existing system deficiencies, and plan for infrastructure needs that support the General Plan land use vision. GPU policies also encourage site drainage features that reduce impermeable surface area, increase surface water infiltration, and minimize surface water runoff during storm events on private and public developments. Therefore, impacts due to development pursuant to the GPU would be less than significant.

In addition, the specific location and design of future storm drainage systems (new or expanded) required to provide services in accordance with the proposed GPU are not known at this time, and therefore, it would be speculative to provide environmental analysis for construction-related impacts. Improvements would also be subject to the proposed General Plan policies; federal, state, and local regulations; and applicable mitigation measures as detailed in each topical section of this Draft PEIR. Moreover, these improvements would fall within the impact significance conclusions in this Draft PEIR for construction-related impacts for implementation of the GPU (e.g., construction air quality, noise, greenhouse gas emissions [GHG], cultural resources). Therefore, construction-related impacts are concluded to be less than significant.

Level of Significance Before Mitigation: With implementation of RR HYD-4 and Policies 1.3, 1.7, 3.4, and 3.5 (see Section 5.18.3.3), Impact 5.18-5 will be less than significant.

5.18.3.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and General Plan Policies, Impact 5.18-3 would be less than significant.

5.18.3.7 MITIGATION MEASURES

No mitigation is required.

5.18.3.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impact 5.18-3 would remain less than significant.

5.18.4 Solid Waste

5.18.4.1 ENVIRONMENTAL SETTING

Regulatory Background

Federal

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act of 1976 (Title 40 of the Code of Federal Regulations), Part 258, contains regulations for municipal solid waste landfills and requires states to implement their own permitting

programs incorporating the federal landfill criteria. The federal regulations address the location, operation, design (e.g., liners, leachate collection, run-off control), groundwater monitoring, and closure of landfills.

State

Assembly Bills 939, 341, and 1826

AB 939 (Integrated Solid Waste Management Act of 1989; Public Resources Code 40050 et seq.) established an integrated waste-management system that focused on source reduction, recycling, composting, and land disposal of waste. AB 939 required every California city and county to divert 50 percent of its waste from landfills by the year 2000. Compliance with AB 939 is measured in part by comparing solid waste disposal rates for a jurisdiction with target disposal rates. Actual rates at or below target rates are consistent with AB 939. AB 939 also requires California counties to show 15 years of disposal capacity for all jurisdictions in the county or show a plan to transform or divert its waste.

AB 341 (Chapter 476, Statutes of 2011) increased the statewide solid waste diversion goal to 75 percent by 2020. The law also mandates recycling for commercial and multifamily residential land uses as well as schools and school districts.

AB 1826 (California Public Resources Code Sections 42649.8 et seq.), signed into law in September 2014, requires recycling of organic matter by businesses generating such wastes in amounts over certain thresholds. This law also requires that local jurisdictions implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily dwellings that consist of five or more units. Multifamily dwellings are not required to recycle food waste including food-soiled paper (CalRecycle 2018). The law took effect in April 2016.

California Solid Waste Reuse and Recycling Access Act of 1991

This act was passed by the state legislature and instructs the California Integrated Waste Management Board (now known as "CalRecycle") to draft a "model ordinance" for the disposal of construction waste associated with development projects. This act also requires local agencies to ensure that development projects have adequate areas for the collection and loading of recyclable materials.

California Green Building Standards Code

Section 5.408 (Construction Waste Reduction, Disposal, and Recycling) of the California Green Building Standards Code (CALGreen; Title 24, California Code of Regulations, Part 11) requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse. CALGreen is updated on a three-year cycle; the 2019 CALGreen took effect on January 1, 2020.

Local

Santa Ana Municipal Code

Chapter 8 - Article XVI (Green Building Standards Code) of the Santa Ana Municipal Code incorporates the California Green Building Standards Code by reference.

Existing Conditions

Solid Waste Collection

Waste Management of Orange County provide residential, commercial, and industrial trash collection; recycling services; and dumpster rentals in the City of Santa Ana. Waste Management of Orange County operates two yards, located in the cities of Santa Ana and Irvine, and two transfer stations, located in the cities of Orange and Irvine. These facilities accept trash and recyclables from local waste haulers, businesses such as landscapers or construction firms, and local residents. Waste Management employees at Orange Transfer in Orange and Sunset Environmental in Irvine sort through the materials brought to the transfer stations to remove items that may be recycled. Materials that cannot be recycled are loaded on to a tractor-trailer and hauled to the landfill (Waste Management 2017).

Landfills

Solid waste generated within the City is delivered to 17 landfills. Of these, Frank R. Bowerman Sanitary Landfill received the largest amount of waste in 2018 (296,256 tons). Olinda Alpha Sanitary Landfill received 35,094 tons. Solid waste disposed from the City of Santa Ana in 2018 totaled 342,026 tons (CalRecycle 2020a).

Table 5.18-20 provides more information on landfill capacity and closing dates for the two primary landfill sites that receive solid waste from the City.

Table 5.18-20 Landfills

Landfill Name and Location	Maximum Permitted Throughput, tons per day	Average Disposal, tons per day[1]	Residual Disposal Capacity, tons per day	Remaining Capacity, cubic yards[2]	Estimated Closing Year
Frank R. Bowerman Sanitary landfill 11002 Bee Canyon Road Irvine, CA 92602	11,500	8,583	2,917	170,400,000	2053
Olinda Alpha Sanitary Landfill 1942 North Valencia Avenue Brea, CA 92823	8,000	8,605	Operating at Capacity	24,500,000	2021[3]
Total	**19,500**	**17,188**	**2,917**	**239,200,000**	Not Applicable

Source: CalRecycle 2020b; CalRecycle 2020c; CalRecycle 2020d; Arnua 2020.
[1] Based on five days per week operation (250 days per year).
[2] Remaining capacity as of June 30, 2019.
[3] OC Waste and Recycling is currently working with the City of Brea to revise the closure date.

AB 939 requires all counties to demonstrate that they have 15 years of available countywide solid waste landfill capacity, either in their jurisdiction, or contracted with another entity. Orange County has 15 years of available countywide solid waste landfill capacity at the Olinda Alpha, Frank R. Bowerman, and Prima Deshecha Landfills. All three landfills are owned by the Orange County and are operated by the OC Waste & Recycling department (Arnau 2020).

Solid Waste Diversion

As discussed previously, the Integrated Waste Management Act (2000) requires all local jurisdictions to divert 50 percent of total annual solid waste tonnage to be recycled. Additionally, as discussed above, in 2008, the requirements were modified to reflect a per capita requirement, rather than tonnage. Each jurisdiction has both a per capita and per employee target diversion rate, which are calculated from the average of 50 percent of generation between base years 2003 through 2006, expressed in terms of per capita disposal. Disposal rates compared to disposal targets are one of several factors in determining a jurisdiction's compliance with AB 939; therefore, actual disposal rates at or below target disposal rates do not necessarily indicate compliance with AB 939.

The City's target disposal maximum rates are 7.5 pounds per capita per day and 16.9 pounds per employee per day. In 2018, the most recent year for which data are available, the actual disposal rates from Santa Ana were 5.5 pounds per day per resident and 12.2 pounds per day per employee lower than target disposal rates and thus consistent with AB 939 (CalRecycle 2020e).

5.18.4.2 THRESHOLDS OF SIGNIFICANCE

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

U-4 Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

U-5 Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

5.18.4.3 REGULATORY REQUIREMENTS AND GENERAL PLAN UPDATE POLICIES

Regulatory Requirements

RR U-7 All development pursuant to the General Plan Update shall comply with Section 4.408 of the 2019 California Green Building Code Standards, which requires new development projects to submit and implement a construction waste management plan in order to reduce the amount of construction waste transported to landfills.

RR U-8 All development pursuant to the General Plan Update shall store and collect recyclable materials in compliance with Assembly Bill 341. Green waste will be handled in accordance with Assembly Bill 1826.

General Plan Update Policies

The following are relevant policies of the Santa Ana GPU, which may contribute to reducing potential impacts to solid waste facilities as a result of implementation of the proposed project.

Economic Prosperity Element

- **Policy 2.9. Energy Conservation.** Collaborate with utility providers and regional partners to encourage business and industry to improve performance in energy efficiency, water conservation, and waste reduction.

Land Use Element

- **Policy 4.3. Sustainable Land Use Strategies.** Encourage land uses and strategies that reduce energy and water consumption, waste and noise generation, air quality impacts, and light pollution.

Public Services Element

- **Policy 3.10. Development Projects.** Encourage new development and reuse projects to incorporate recycling and organics collection activities aligned with state waste reduction goals.
- **Policy 3.11. Waste Collection.** Support infill development projects that provide adequate and creative solutions for waste and recycling collection activities.

5.18.4.4 ENVIRONMENTAL IMPACTS

Impact Analysis

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

Impact 5.18-6: Existing and/or proposed solid waste facilities would be able to accommodate development pursuant to the GPU and comply with related solid waste regulations. [Thresholds U-4 and U-5]

Forecast Solid Waste Generation by General Plan Buildout

As shown in Table 5.18-21, the proposed GPU is forecast to generate approximately 3.14 million pounds of solid waste per day for the buildout year. Solid waste disposed from the City of Santa Ana in 2018 totaled 342,026 tons (CalRecycle 2020a). This amounts to approximately 2,736,208 pounds per day.[2] The net increase in estimated solid waste generation compared to existing conditions is approximately 401,408 pounds per day.

[2] Note that 342,036 tons is the amount of solid waste received at solid waste facilities in 2018. The daily rate is based on five days per week operation (250 days per year).

Table 5.18-21 Forecast Solid Waste Generation at Full Buildout

Area	Number of Dwelling Units	Non-Residential Square Footage	Solid Waste Generation (pounds/day)
Focus Area			
West Santa Ana Boulevard	3,920	2,808,805	120,779
Grand Avenue/17th Street	5,492	5,082,641	218,554
South Main Street	2,283	703,894	30,267
South Bristol Street	2,308	946,662	40,706
55 Freeway/Dyer Road	9,952	6,412,283	275,728
Focus Area Total	**23,955**	**15,684,285**	**674,424**
Remainder of City			
All Other Areas of City	91,098	57,283,532	2,463,192
Citywide Total	**115,053**	**72,967,816**	**3,137,616**

Notes: SF = square feet
Waste generation factors are:
Residential: 12.23 lbs./household/day from Arnua 2020.
Nonresidential: a generation rate of 0.043 lb/SF/day (average of office, commercial/retail, and industrial/warehouse) from Arnua 2020.

The Frank R. Bowerman Landfill has a residual capacity of 2,917 tons per day, or about 5.8 million pounds per day, as shown in Table 5.18-20. The estimated closing date is 2053. Given that the residual capacity of the Frank R. Bowerman Landfill exceeds the forecast daily solid waste generation by approximately 2.7 million pounds per day it is anticipated that waste generated by the plan area at buildout could be accommodated by existing facilities. Mr. John Arnau, at OC Waste and Recycling, confirmed that the Orange County solid waste landfill system would have the ability to provide for the proposed project with long-term solid waste landfill capacity while maintaining the 15-year countywide solid waste landfill capacity as required by AB 939 (Arnua 2020).

Furthermore, all development pursuant to the GPU would comply with Section 4.408 of the 2019 California Green Building Code Standards, which requires that at least 65 percent of nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse. Development would also comply with the requirements of AB 341 that mandates recycling for commercial and multifamily residential land uses as well as schools and school districts. Additionally, businesses pursuant to the GPU that generate organic waste in amounts over a certain threshold would be mandated to recycle organic matter in accordance with AB 1826. GPU policies also encourage land uses and strategies that reduce waste generation and support infill development projects that provide adequate and creative solutions for waste and recycling collection activities. Therefore, solid waste facilities would be able to accommodate project-generated solid waste and comply with related solid waste regulations and impacts would be less than significant.

Level of Significance Before Mitigation: With the implementation of RR U-7 and RR U-8 and Policies 2.9, 3.10, 3.11, and 4.3 (see Section 5.18.4.3), Impact 5.18-6 will be less than significant.

5.18.4.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements, Impact 5.18-6 would be less than significant.

5.18.4.6 MITIGATION MEASURES

No mitigation is required.

5.18.4.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would remain less than significant.

5.18.5 Other Utilities

5.18.5.1 ENVIRONMENTAL SETTING

Regulatory Background

Federal

Energy Independence and Security Act of 2007

Signed into law in December 2007, this act is an energy policy law that contains provisions designed to increase energy efficiency and the availability of renewable energy. This act contains provisions for increasing fuel economy standards for cars and light trucks, while establishing new minimum efficiency standards for lighting as well as residential and commercial appliance equipment.

Energy Policy Act of 2005

Passed in July 2005, the Energy Policy Act includes a comprehensive set of provisions to address energy issues. This act includes tax incentives for the following: energy conservation improvements in commercial and residential buildings; fossil fuel production and clean coal facilities; and construction and operation of nuclear power plants, among other things. Subsidies are also included for geothermal, wind energy, and other alternative energy producers.

Natural Gas Pipeline Safety Act of 1968

The Natural Gas Pipeline Safety Act of 1968 authorizes the Department of Transportation (DOT) to regulate pipeline transportation of flammable, toxic, or corrosive natural gas and other gases as well as the transportation and storage of liquefied natural gas. The Pipeline and Hazardous Materials Safety Administration (PHMSA) within DOT develops and enforces regulations for the safe, reliable, and environmentally sound operation of the nation's 2.6 million miles of pipelines. DOT's and PHMSA's regulations governing natural gas transmission pipelines, facility operations, employee activities, and safety are found at 49 CFR Parts 190 through 192, 49 CFR Part 195, and 49 CFR Part 199.

Pipeline Safety Improvement Act of 2002

The Pipeline Safety Improvement Act mandates that the DOT, the Department of Energy (DOE), and the National Institute of Standards and Technology (NIST) in the Department of Commerce carry out a program of research, development, demonstration and standardization to ensure the integrity of pipeline facilities. The purpose of the R&D program is to identify safety and integrity issues and develop methodologies and

technologies to characterize, detect, and manage risks associated with natural gas and hazardous liquid pipelines (PHMSA 2017).

Pipeline Inspection, Enforcement, and Protection (PIPES) Act of 2006

The Pipeline Inspection, Enforcement, and Protection (PIPES) Act confirms the commitment to the Integrity Management Program (IMP) and other programs enacted in the Pipeline Safety Improvement Act of 2002. The 2006 legislation includes provisions on:

- Preventing excavation damage to pipelines through the enhanced use and improved enforcement of state "One-Call" laws that preclude excavators from digging until they contact the state One-Call system to locate the underground pipelines
- Minimum standards for IMPs for distribution pipelines (including installation of excess flow valves on single family residential service lines based on feasibility and risk);
- Standards for managing gas and hazardous liquid pipelines to reduce risks associated with human factors (e.g., fatigue);
- Authority for the Secretary to waive safety standards in emergencies
- Authority for the Secretary to assist in restoration of disrupted pipeline operations;
- Review and update incident reporting requirements;
- Requirements for senior executive officers to certify operator integrity management performance reports; and
- Clarification of jurisdiction between states and PHMSA for short laterals that feed industrial and electric generator consumers from interstate natural gas pipelines (INGAA 2019).

Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011

The Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011 was designed to examine and improve the state of pipeline safety regulation. The act:

- Reauthorizes PHMSA's federal pipeline safety programs through fiscal year 2015
- Provides the regulatory certainty necessary for pipeline owners and operators to plan infrastructure investments and create jobs
- Improves pipeline transportation by strengthening enforcement of current laws and improving existing laws where necessary
- Ensures a balanced regulatory approach to improving safety that applies cost-benefit principles

- Protects and preserves Congressional authority by ensuring certain key rulemakings are not finalized until Congress has an opportunity to act (PHMSA 2019)

National Energy Policy

Established in 2001 by the National Energy Policy Development Group, this policy is designed to help the private sector and state and local governments promote dependable, affordable, and environmentally sound production and distribution of energy for the future. Key issues addressed by the energy policy are energy conservation, repair, and expansion of energy infrastructure, and ways of increasing energy supplies while protecting the environment.

State

California Public Utilities Commission

In September 2008, the California Public Utilities Commission (CPUC) adopted the Long-Term Energy Efficiency Strategic Plan, which provides a framework for energy efficiency in California through the year 2020 and beyond. It articulates a long-term vision, as well as goals for each economic sector, identifying specific near-term, mid-term, and long-term strategies to assist in achieving these goals. This plan sets forth the following four goals, known as Big Bold Energy Efficiency Strategies, to achieve significant reductions in energy demand:

- All new residential construction in California will be zero net energy by 2020;
- All new commercial construction in California will be zero net energy by 2030;
- Heating, and ventilation and air conditioning (HVAC) will be transformed to ensure that its energy performance is optimal for California's climate; and
- All eligible low-income customers will be given the opportunity to participate in the low-income energy efficiency program by 2020.

With respect to the commercial sector, the Long-Term Energy Efficiency Strategic Plan notes that commercial buildings, which include schools, hospitals, and public buildings, consume more electricity than any other end-use sector in California. The commercial sector's 5 billion-plus square feet of space accounts for 38 percent of the state's power use and over 25 percent of natural gas consumption. Lighting, cooling, refrigeration, and ventilation account for 75 percent of all commercial electric use, while space heating, water heating, and cooking account for over 90 percent of gas use. In 2006, schools and colleges were in the top five facility types for electricity and gas consumption, accounting for approximately 10 percent of the state's electricity and gas use.

The CPUC and California Energy Commission (CEC) have adopted the following goals to achieve zero net energy (ZNE) levels by 2030 in the commercial sector:

- **Goal 1:** New construction will increasingly embrace zero net energy performance (including clean, distributed generation), reaching 100 percent penetration of new starts in 2030.

- **Goal 2:** 50 percent of existing buildings will be retrofitted to zero net energy by 2030 through achievement of deep levels of energy efficiency and with the addition of clean distributed generation.

- **Goal 3:** The commercial lighting market will be transformed through technological advancement and innovative utility initiatives.

California Energy Commission

The CEC was created in 1974 as the state's principal energy planning organization in order to meet the energy challenges facing the state in response to the 1973 oil embargo. The CEC is charged with six basic responsibilities when designing state energy policy:

- Forecast statewide electricity needs.
- License power plants to meet those needs.
- Promote energy conservation and efficiency measures.
- Develop renewable energy resources and alternative energy technologies.
- Promote research, development, and demonstration.
- Plan for and direct the state's response to energy emergencies.

California Energy Benchmarking and Disclosure

AB 1103 (2007) requires that electric and gas utilities maintain records of the energy consumption data of all nonresidential buildings to which they provide service and that by January 1, 2009, upon authorization of a nonresidential building owner or operator, an electric or gas utility shall upload all of the energy consumption data for the specified building to the California Environmental Protection Agency Energy Star Portfolio Manager in a manner that preserves the confidentiality of the customer. This statute further requires a nonresidential building owner or operator disclose Energy Star Portfolio Manager benchmarking data and ratings, for the most recent 12-month period, to a prospective buyer, lessee, or lender. Enforcement of the latter requirement began on January 1, 2014.

On October 8, 2015, AB 802 was signed into law. AB 802 would revise and recast the above provisions. AB 802 directs the CEC to establish a statewide energy benchmarking and disclosure program and enhances the CEC's existing authority to collect data from utilities and other entities for the purposes of energy forecasting, planning, and program design. Among the specific provisions, AB 802 would require utilities to maintain records of the energy usage data of all buildings to which they provide service for at least the most recent 12 complete months. Beginning no later than January 1, 2017, AB 802 would require each utility, upon the request and the written authorization or secure electronic authorization of the owner, owner's agent, or operator of a covered building, as defined, to deliver or provide aggregated energy usage data for a covered building to the owner, owner's agent, operator, or to the owner's account in the Energy Star Portfolio Manager, subject to specified requirements. AB 802 would also authorize the commission to specify additional information to be delivered by utilities for certain purposes.

California Building Code: Building Energy Efficiency Standards

Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977. Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On June 10, 2015, the CEC adopted the 2016 Building Energy Efficiency Standards, which went into effect on January 1, 2017. The 2019 Building Energy Efficiency Standards, which were recently adopted on May 9, 2018, go into effect starting January 1, 2020.

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

The 2019 standards move toward cutting energy use in new homes by more than 50 percent and will require installation of solar photovoltaic systems for single-family homes and multifamily buildings of three stories and less. The 2019 standards focus on four key areas: (1) smart residential photovoltaic systems; (2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); (3) residential and nonresidential ventilation requirements; (4) and nonresidential lighting requirements (CEC 2018a). Under the 2019 standards, nonresidential buildings will be 30 percent more energy efficient compared to the 2016 standards, and single-family homes will be 7 percent more energy efficient (CEC 2018b). When accounting for the electricity generated by the solar photovoltaic system, single-family homes would use 53 percent less energy compared to homes built to the 2016 standards (CEC 2018b).

Appliance Efficiency Regulations

California's Appliance Efficiency Regulations (California Code of Regulations [CCR] Title 20, Parts 1600–1608) contain energy performance, energy design, water performance, and water design standards for appliances (including refrigerators, ice makers, vending machines, freezers, water heaters, fans, boilers, washing machines, dryers, air conditioners, pool equipment, and plumbing fittings) that are sold or offered for sale in California. These standards are updated regularly to allow consideration of new energy efficiency technologies and methods.

Governor's Green Building Executive Order (S-20-04)

On December 14, 2004, California's governor signed Executive Order S-20-04, creating a Green Building Action Plan to improve the energy performance of all state buildings. The order mandates reducing grid-based energy purchases for state-owned buildings by 20 percent by 2015, through cost-effective efficiency measures and distributed generation technologies. These measures should include, but not be limited to:

- Designing, constructing, and operating all new and renovated state-owned facilities paid for with state funds as "LEED Silver" or higher-certified buildings;
- Identifying the most appropriate financing and project delivery mechanisms to achieve these goals;
- Seeking out office space leases in buildings with a U.S. EPA Energy Star rating; and
- Purchasing or operating Energy Star[3] electrical equipment whenever cost-effective (SOC 2004).

State Greenhouse Gas Regulations

Current State of California guidance and goals for reductions in GHG emissions from stationary sources are generally embodied in Executive Orders S-03-05 and B-30-15, AB 32 and AB 197, and SB 32. While these regulations are inherently aimed at reducing GHG emissions, they have a direct relationship to energy conservation. A detailed discussion of these regulations is provided in Section 5.7, *Greenhouse Gas Emissions*, of the Draft PEIR.

Local

Santa Ana Municipal Code

Chapter 8 - Article XVI (Green Building Standards Code) of the Santa Ana Municipal Code incorporates the California Green Building Standards Code by reference.

Existing Conditions

Electric power is provided to the City of Santa Ana by Southern California Edison (SCE). Natural gas is provided by the Southern California Gas Company (SoCalGas). Internet, phone, and satellite television services are currently provided by a variety of private sources, including AT&T, Time Warner Cable, Spectrum, Windstream, and Mediacom.

Electricity

Estimated Existing Electricity Demand in the Plan Area

Total estimated existing (2020) electricity demand in the plan area is about 1,570 million kilowatt hours (kWh) per year, as shown in Table 5.18-22.

[3] Energy Star is a government-backed labeling program that helps people and organizations save money and reduce GHG emissions by identifying factories, office equipment, home appliances, and electronics that have superior energy efficiency.

Table 5.18-22 Estimated Existing Electricity Demand

Area	Households	Residential Electricity Usage, kWh per year (Subtotal)	Employment	Non-Residential Electricity Usage, kWh per year (Subtotal)	Electricity Usage, kWh per year (Total)
City of Santa Ana	78,792	380,621,219	158,980	1,189,836,014	1,570,457,233
Plan Area, Total	**78,792**	**380,621,219**	**158,980**	**1,189,836,014**	**1,570,457,233**

Note: Electricity usage utilizes a seven-year (2012-2018) average annual electricity consumption based on data provided by SCE.

SCE Electric Generating Capacity

SCE is one of the nation's largest electric utilities providing electricity service to more than 15 million people in a 50,000-square-mile area of central, coastal, and Southern California. SCE's total mid-electricity[4] consumption in SCE's service area was 106,080 gigawatt-hour (GWh) in 2015 and is forecast to increase to 118,803 GWh in 2027. Therefore, the total mid-electricity consumption in SCE's service area is forecast to increase by approximately 12,723 GWh between 2015 and 2027 (CEC 2016).

Natural Gas

Existing Estimated Natural Gas Demands in Plan Area

Existing natural gas demands in the plan area are estimated at about 48.9 million therms per year, as shown in Table 5.18-23.

Table 5.18-23 Estimated Existing Natural Gas Demand

Area	Households	Residential Natural Gas Usage, therms per year (Subtotal)	Employment	Non-Residential Natural Gas Usage, therms per year (Subtotal)	Natural Gas Usage, therms per year (Total)
City Boundary	78,792	21,783,050	158,980	27,074,864	48,857,914
Plan Area, Total	**78,792**	**21,783,050**	**158,980**	**27,074,864**	**48,857,914**

Note: Natural gas usage utilizes a five-year (2014-2018) average annual natural gas consumption based on data provided by SoCalGas.

SoCalGas Natural Gas Generating Capacity

SoCalGas service area spans much of the southern half of California, from Imperial County on the southeast to San Luis Obispo County on the northwest, to part of Fresno County on the north, to Riverside County and most of San Bernardino County on the east. Total natural gas supplies available to SoCalGas in the year 2019 is estimated at 3,385 million cubic feet per day (MMCF/day). Supplies are forecasted to remain constant at

[4] CEC forecast include three scenarios: a high energy demand case, a low energy demand case, and a mid-energy demand case. The high energy demand case incorporates relatively high economic/demographic growth, relatively low electricity and natural gas rates, and relatively low efficiency program and self-generation impacts. The low energy demand case includes lower economic/demographic growth, higher assumed rates, and higher efficiency program and self-generation impacts. The mid case uses input assumptions at levels between the high and low cases.

3,775 MMCF/day from 2020 through 2035. Total natural gas consumption in SoCalGas' service area is forecast to decline slightly from 2,591 MMCF/day in 2019 to 2,313 MMCF/day in 2035 (CGEU 2018).

5.18.5.2 THRESHOLDS OF SIGNIFICANCE

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

U-1 Require or result in the relocation or construction of new or expanded electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

5.18.5.3 REGULATORY REQUIREMENTS AND GENERAL PLAN UPDATE POLICIES

Regulatory Requirements

RR U-10 New buildings are required to achieve the current California Building Energy and Efficiency Standards (Title 24, Part 6) and California Green Building Standards Code (CALGreen) (Title 24, Part 11).

RR U-11 All new appliances would comply with the 2012 Appliance Efficiency Regulations (Title 20, California Code of Regulations, Sections 1601 through 1608).

General Plan Update Policies

The following are relevant policies of the Santa Ana GPU, which may contribute to reduce potential impacts to electricity and natural gas utilities as a result of implementation of the proposed project.

Conservation Element

- **Policy 1.4. Development Standards.** Support new development that meets or exceeds standards for energy-efficient building design and site planning.

Public Services Element

- **Policy 3.1. Interagency Coordination.** Consult with regional agencies and utility companies to pursue energy efficiency goals and expand renewable energy strategies.
- **Policy 3.2. Education Programs.** Support education programs to provide information on energy conservation and alternatives to non-renewable energy sources.
- **Policy 3.5. Landscaping.** Encourage the planting of native and diverse tree species to reduce heat island effect, reduce energy consumption, and contribute to carbon mitigation.
- **Policy 3.7. Energy Conservation Design and Construction.** Incorporate energy conservation features in the design of new construction and rehabilitation projects.

- **Policy 3.8. Energy-Efficient Public Facilities.** Promote and encourage efficient use of energy and the conservation of available resources in the design, construction, maintenance, and operation of public facilities, infrastructure, and equipment.

- **Policy 3.10. Energy Conservation in Public Projects.** Work with businesses and contractors that use energy-efficient practices in the provision of services and equipment for city construction projects.

Economic Prosperity Element

- **Policy 2.9. Energy Conservation.** Collaborate with utility providers and regional partners to encourage business and industry to improve performance in energy efficiency, water conservation, and waste reduction.

Land Use Element

- **Policy 4.3. Sustainable Land Use Strategies.** Encourage land uses and strategies that reduce energy and water consumption, waste and noise generation, air quality impacts, and light pollution.

- **Policy 4.4. Natural Resource Capture.** Encourage the use of natural processes to capture rainwater runoff, sustainable electric power, and passive climate control.

Open Space Element

- **Policy 1.6. Sustainable Landscape.** Promote citywide use of drought tolerant landscape and development practices for wise water use and energy consumption.

Public Services Element

- **Policy 1.7. Sustainable Practices.** Use sustainable and energy efficient building and maintenance practices as part of the development or rehabilitation of any public facility or capital improvement.

Urban Design Element

- **Policy 2.11. Sustainable Practices.** Encourage sustainable development through the use of drought tolerant landscaping, permeable hardscape surfaces, and energy efficient building design and construction.

5.18.5.4 ENVIRONMENTAL IMPACTS

Impact Analysis

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

Impact 5.18-7: Development pursuant to the GPU would require or result in the relocation or construction of new or expanded electric power and natural gas. [Threshold U-1]

Forecasted Electricity Demands

The net increase in forecast electricity demand at GPU buildout compared to existing conditions is about 256 million kWh per year, or 256 GWh per year. Total forecast electricity demands for the plan area are shown in Table 5.18-24. The total mid-electricity consumption in SCE's service area is forecast to increase by approximately 12,723 GWh between 2015 and 2027 (CEC 2016). Therefore, the forecast increase in electricity demand for the plan area is well within the forecasted demand in SCE's service area. GPU buildout would not require SCE to obtain additional electricity supplies and impacts would be less than significant.

Table 5.18-24 Estimated Full Buildout Electricity Demand

Area	Households	Residential Electricity Usage, kWh per year (Subtotal)[1,2]	Employment	Non-Residential Electricity Usage, kWh per year (Subtotal)[1,3]	Electricity Usage, kWh per year (Total)
City of Santa Ana	115,053	555,787,557	170,416	1,275,425174	1,831,212,730

[1] Electricity usage utilizes a seven-year (2012-2018) average annual electricity consumption based on data provided by SCE.
[2] Based on the increase in households from 78,792 households under baseline conditions to 115,053 households under full buildout conditions.
[3] Based on the increase in employment from 158,980 jobs under baseline conditions to 170,416 jobs under full buildout conditions.

Forecasted Natural Gas Demands

The net increase in natural gas demand by full buildout of the GPU compared to existing conditions is about 12 million therms per year (see Table 5.18-25). Total natural gas supplies available to SoCalGas in the year 2019 is estimated at 3,385 million cubic feet per day (MMCF/day). Supplies are forecasted to remain constant at 3,775 MMCF/day from 2020 through 2035. Total natural gas consumption in SoCalGas' service area is forecast to decline slightly from 2,591 MMCF/day in 2019 to 2,313 MMCF/day in 2035 (CGEU 2018).

The net increases in natural gas demands due to the GPU buildout are within the amounts that SoCalGas forecasts that it will supply to its customers, and buildout would not require SoCalGas to obtain increased natural gas supplies over its currently forecast supplies. Impacts would be less than significant.

Table 5.18-25 Estimated Full Buildout Natural Gas Demand

Area	Households	Residential Natural Gas Usage, therms per year (Subtotal)	Employment	Non-Residential Natural Gas Usage, therms per year (Subtotal)	Natural Gas Usage, therms per year (Total)
City Boundary	115,053	31,807,865	170,416	29,022,456	60,830,320

[1] Natural gas usage utilizes a five-year (2014-2018) average annual natural gas consumption based on data provided by SoCalGas
[2] Based on the increase in households from 78,792 households under baseline conditions to 115,053 households under full buildout conditions.
Based on the increase in employment from 158,980 jobs under baseline conditions to 170,416 jobs under full buildout conditions.

In addition, any development pursuant to the proposed GPU would be required to comply with energy efficiency standards set forth by Title 24 of the California Administrative Code, appliance efficiency regulations set forth by Title 20 of the California Administrative Code, CALGreen, and policies of the GPU.

Furthermore, GPU policies support new development that meet or exceed standards for energy-efficient building design, support education programs to provide information on energy conservation, encourage the planting of native and diverse tree species to reduce heat island effect and energy consumption, and promote and encourage efficient use of energy and the conservation of available resources in the design, construction, maintenance, and operation of public facilities, infrastructure, and equipment. The policies also support citywide use of drought tolerant landscape and development practices for wise water use and energy consumption, and the use of energy efficient building and maintenance practices as part of the development or rehabilitation of any public facility or capital improvement project. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation: With the implementation of RR U-10 and RR U-11 and Policies 1.4, 1.6, 1.7, 2.9, 2.11, 3.1, 3.2, 3.5, 3.7, 3.8, 3.10, 4.3, and 4.4 (see Section 5.18.5.3), Impact 5.18-7 will be less than significant.

5.18.5.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and General Plan policies, Impact 5.18-7 would be less than significant.

5.18.5.6 MITIGATION MEASURES

No mitigation measures are required.

5.18.5.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impact 5.18-7 would remain less than significant.

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6. Significant Unavoidable Adverse Impacts

At the end of Chapter 1, *Executive Summary*, is a table that summarizes the impacts, mitigation measures, and levels of significance before and after mitigation. Mitigation measures would reduce the level of impact, but the following impacts would remain significant, unavoidable, and adverse after mitigation measures are applied:

Air Quality

- **Impact 5.2-1, Inconsistency with Air Quality Management Plan.** The General Plan Update (GPU) would be inconsistent with the South Coast Air Quality Management Plan (AQMP) because buildout under the GPU would exceed the population estimates assumed for the AQMP and would cumulatively contribute to the nonattainment designations of the South Coast Air Basin (SoCAB).

  Incorporation of Mitigation Measure AQ-2 into future development projects for the operation phase would contribute to reduced criteria air pollutant emissions associated with buildout of the GPU. Additionally, goals and policies in the GPU would promote increased capacity for alternative transportation modes and implementation of transportation demand management strategies. However, due to the magnitude and scale of the land uses that would be developed, no mitigation measures are available that would reduce operation and construction impacts below South Coast Air Quality Management District (AQMD) thresholds. In addition, the population and employment assumptions of the AQMP would continue to be exceeded until the AQMP is revised and incorporates the projections of the General Plan Update. Therefore, Impact 5.2-1 would remain significant and unavoidable.

- **Impact 5.2-2, Construction Emissions.** Buildout of the General Plan Update would occur over a period of approximately 25 years or longer. Construction activities associated with buildout of the GPU could generate short-term emissions that exceed the South Coast AQMD'S significance thresholds during this time and cumulatively contribute to the nonattainment designations of the SoCAB. Implementation of Mitigation Measure AQ-1 would reduce criteria air pollutant emissions from construction-related activities to the extent feasible. However, construction time frames and equipment for site-specific development projects are not available at this time, and there is a potential for multiple development projects to be constructed at one time, resulting in significant construction-related emissions. Therefore, despite adherence to Mitigation Measure AQ-1, Impact 5.2-2 would remain significant and unavoidable.

- **Impact 5.2-3, Long-Term Emissions.** Buildout in accordance with the GPU would generate long-term emissions that would exceed South Coast AQMD's regional significance thresholds and cumulatively contribute to the nonattainment designations of the SoCAB. Mitigation Measure AQ-2, in addition to the goals and policies of the GPU, would reduce air pollutant emissions to the extent feasible. The measures and policies covering topics such as expansion of the pedestrian and bicycle networks, promotion of public and active transit, and support to increase building energy efficiency and energy conservation, would also

reduce criteria air pollutants in the city. Further, compared to existing baseline year conditions, emissions of NO_X, CO, and SO_X are projected to decrease from current levels despite growth associated with the GPU.

However, Impact 5.2-3 would remain significant and unavoidable due to the magnitude of the overall land use development associated with the GPU. Contributing to the nonattainment status would also contribute to elevated health effects associated with criteria air pollutants.

- **Impact 5.2-4, Exposure of Sensitive Receptors to Toxic Air Contaminants.** Buildout of the GPU could expose sensitive receptors to substantial concentrations of toxic air contaminants. Buildout could result in new sources of criteria air pollutant emissions and/or toxic air contaminants (TACs) near existing or planned sensitive receptors. Review of development projects by South Coast AQMD for permitted sources of air toxics (e.g., industrial facilities, dry cleaners, and gasoline dispensing facilities) would ensure that health risks are minimized. Additionally, Mitigation Measure AQ-3 would ensure mobile sources of TACs not covered under South Coast AQMD permits are considered during subsequent, project-level environmental review by the City of Santa Ana. Individual development projects would be required to achieve the incremental risk thresholds established by South Coast AQMD, and TACs would be less than significant.

  However, implementation of the GPU would generate TACs that could contribute to elevated levels in the air basin. Though individual projects would achieve the project-level risk threshold of 10 per million, they would nonetheless contribute to the higher levels of risk in the SoCAB. Therefore, the GPU's cumulative contribution to health risk is significant and unavoidable.

- **Impact 5.2-5, Exceeding Localized Significance Thresholds.** Because existing sensitive receptors may be close to project-related construction activities and large emitters of on-site operation-related criteria air pollutant emissions, construction and operation emissions generated by individual development projects have the potential to exceed South Coast AQMD's Local Significance Thresholds (LSTs). Mitigation Measures AQ-1 and AQ-2 would reduce the regional construction and operation emissions associated with buildout of the GPU and therefore also result in a reduction of localized construction- and operation-related criteria air pollutant emissions to the extent feasible. However, even with the implementation of these mitigation measures, Impact 5.2-5 would remain significant and unavoidable.

Cultural Resources

- **Impact 5.4-1, Historic Resources.** Generally, potential impacts to historical resources resulting from future projects developed pursuant to the GPU will be mitigated by the City's fulfillment of its statutory responsibilities under CEQA. However, for certain development pursuant to the GPU, the City may determine that significant impacts to historical resources cannot be avoided. The City shall require, at a minimum, that the affected historical resources be thoroughly documented before issuance of any permits. Though the possible demolition or alteration of a historical resource cannot be mitigated to a less than significant level, recordation of the resource will reduce significant adverse impacts to historical resources

to the maximum extent feasible. Nevertheless, impacts to historical resources will be significant and unavoidable.

Greenhouse Gas Emissions

- **Impact 5.7-1, Greenhouse Gas Emissions.** Implementation of Mitigation Measure GHG-1 would ensure that the City is tracking and monitoring the City's GHG emissions in order to chart a trajectory to achieve the long-term, year 2050, GHG reduction goal set by Executive Order S-03-05. However, at this time, there is no plan past 2030 that achieves the long-term GHG reduction goal established under Executive Order S-03-05. As identified by the California Council on Science and Technology, the state cannot meet the 2050 goal without major advancements in technology. Advancements in technology in the future could provide additional reductions and allow the state and City to meet the 2050 goal, but in the meantime, Impact 5.7-1 would be significant and unavoidable.

Noise

- **Impact 5.12-1, Construction Noise.** Mitigation Measure N-1 would reduce potential noise impacts during construction to the extent feasible. However, due to the potential for proximity of construction activities to sensitive uses, the number of construction projects occurring simultaneously, and the potential duration of construction activities, Impact 5.12-1 could result in a temporary substantial increase in noise levels above ambient conditions. Therefore, impacts would remain significant and unavoidable. It should be noted that the identification of this program-level impact does not preclude the finding of less-than-significant impacts for subsequent projects analyzed at the project level.

- **Impact 5.12-2, Traffic Noise.** Mitigation Measure N-2 would reduce potential interior noise impacts to future noise-sensitive receptors below the thresholds. However, there are no feasible or practical mitigation measures available to reduce project-generated traffic noise to less than significant levels for existing residences along affected roadways. No individual measures and no set of feasible or practical mitigation measures are available to reduce project-generated traffic noise to less than significant levels in all cases. Thus, traffic noise would remain a significant and unavoidable impact. It should be noted that the identification of this program-level impact does not preclude the finding of less-than-significant impacts for subsequent projects analyzed at the project level.

6. Significant Unavoidable Adverse Impacts

Population and Housing

- **Impact 5.13-1, Population and Housing Growth.** Full buildout of the GPU would result in a population of 431,629, and the city's 2045 population growth would be approximately 20 percent greater than the Orange County COG's 2045 projections. Furthermore, the city's housing units at buildout would be 115,053, which exceeds the Orange County COG's projection by 38 percent. There are no feasible mitigation measures to mitigate the population and housing growth at buildout, and impacts would be significant and unavoidable.

7. Alternatives to the General Plan Update

7.1 INTRODUCTION

7.1.1 Purpose and Scope

The California Environmental Quality Act (CEQA) requires that an environmental impact report (EIR) include a discussion of reasonable project alternatives that would "feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any significant effects of the project, and evaluate the comparative merits of the alternatives" (CEQA Guidelines § 15126.6[a]). As required by CEQA, this chapter identifies and evaluates potential alternatives to the General Plan Update (GPU).

Section 15126.6 of the CEQA Guidelines explains the foundation and legal requirements for the alternatives analysis in an EIR. Key provisions are:

- "[T]he discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly." (15126.6[b])

- "The specific alternative of 'no project' shall also be evaluated along with its impact." (15126.6[e][1])

- "The no project analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, 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. If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." (15126.6[e][2])

- "The range of alternatives required in an EIR is governed by a 'rule of reason' that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project." (15126.6[f])

- "Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)" (15126.6[f][1])."Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR." (15126.6[f][2][A])C

- "An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative." (15126.6[f][3])

For each development alternative, this analysis:

- Describes the alternative.
- Analyzes the impact of the alternative as compared to the GPU.
- Identifies the impacts of the project that would be avoided or lessened by the alternative.
- Concludes whether the alternative would eliminate a significant, unavoidable impact compared to the proposed GPU.
- Assesses whether the alternative would meet most of the basic project objectives.
- Evaluates the comparative merits of the alternative and the project.

According to Section 15126.6(d) of the CEQA Guidelines, "[i]f an alternative would cause…significant effects in addition 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."

7.1.2 Project Objectives

As described in Section 3.2, the following objectives have been established for the GPU and will aid decision makers in their review of the project, the project alternatives, and associated environmental impacts.

1. Promote infill development while respecting and protecting established neighborhoods
2. Optimize high density residential and mixed-use development that maximizes potential use of mass transit
3. Provide locations for new housing development that maximizes affordable housing opportunities to achieve both City and regional housing goals
4. Facilitate new development at intensities sufficient to generate community benefits and attract economic activity
5. Provide housing and employment opportunities at an urban level of intensity at the City's edge
6. Introduce mixed-use urban villages and encourage experiential commercial uses that are more walkable, bike-friendly, and transit-oriented
7. Develop opportunities for live/work, artist spaces, and small-scale manufacturing

7.1.3 Significant Impacts of the Project

As discussed above, a primary consideration in defining Project alternatives is their potential to reduce or eliminate significant impacts compared to the GPU. The impact analysis in Chapter 5 of this Draft PEIR concludes that implementation of the GPU would result in significant impacts, as follows.

7.1.3.1 SIGNIFICANT UNAVOIDABLE IMPACTS

Air Quality

- **Impact 5.2-1** The General Plan update would be inconsistent with the South Coast Air Quality Management Plan (AQMP) because buildout under the plan would exceed the population estimates assumed for the AQMP and would cumulatively contribute to the nonattainment designations of the South Coast Air Basin (SoCAB).
- **Impact 5.2-2** Construction activities associated with buildout of the General Plan update would generate short-term emissions that exceed the South Coast Air Quality Management District (AQMD's) significance thresholds and cumulatively contribute to the nonattainment designations of the SoCAB.
- **Impact 5.2-3** Buildout in accordance with the General Plan update would generate long-term emissions that would exceed South Coast AQMD's regional significance thresholds and cumulatively contribute to the nonattainment designations of the SoCAB.
- **Impact 5.2-4** Buildout of the General Plan update could expose sensitive receptors to substantial concentrations of toxic air contaminants.
- **Impact 5.2-5** Construction and operation emissions generated by individual development projects have the potential to exceed South Coast AQMD's Local Significance Thresholds.

Cultural Resources

- **Impact 5.4-1** The proposed General Plan Update would allow development in areas that have historic resources identified by previous cultural resource surveys. Development in these areas would, therefore, potentially cause the disturbance of historic resources in the plan area.

Greenhouse Gas Emissions

- **Impact 5.7-1** Implementation of the proposed General Plan Update would result in a decrease in GHG emissions in horizon year 2045 in comparison to existing conditions but may not meet the long-term GHG reduction goal under Executive Order S-03-05.

Noise

- **Impact 5.12-1** Due to the potential for proximity of construction activities to sensitive uses, the number of construction projects occurring simultaneously, and the potential longevity of construction activities, construction noise could result in a temporary substantial increase in noise levels above ambient conditions.

- **Impact 5.12-2** Buildout of the individual land uses and projects for implementation of the General Plan Update would expose existing residences to project-generated traffic noise.

Population and Housing

- **Impact 5.13-1** At buildout, the General Plan update would result in an increase in population and housing units that exceeds the Orange County COG projections by approximately 20 and 38 percent, respectively. There are no feasible mitigation measure and impacts would be significant and unavoidable.

7.1.3.2 SIGNIFICANT UNTIL MITIGATED IMPACTS

Air Quality

Impact 5.2 6: Industrial land uses accommodated under the General Plan update could create other emissions, such as those leading to objectionable odors, that would adversely affect a substantial number of people.

Biological Resources

- **Impact 5.3-1.** Buildout under the General Plan Update could impact plant and animal species and habitat that are sensitive or protected under federal and/or California regulations.

- **Impact 5.3-4.** Implementation of the General Plan Update could impact wildlife corridors and nesting sites.

Cultural Resources

- **Impact 5.4-2.** Development consistent with the General Plan Update could impact archeological resources.

Geology and Soils

- **Impact 5.6-4**. Paleontological resources could be impacted by development resulting from the implementation of the General Plan Update.

Noise

Impact 5.12-3. The potential for sensitive receptors within the plan area to be exposed to annoying and/or interfering levels of vibration from commercial or industrial operations and existing railroad lines, operations-related vibration impacts associated with implementation of the GPU are considered potentially significant.

Tribal Cultural Resources

- **Impact 5.17-1** Buildout consistent with the General Plan Update could adversely impact tribal cultural resources that are listed in a register.
- **Impact 5.17-2** Buildout consistent with the General Plan Update could adversely impact tribal cultural resources pursuant to criteria in Public Resources Code Section 5024.1(c).

7.2 ALTERNATIVES CONSIDERED AND REJECTED DURING THE SCOPING/PROJECT PLANNING PROCESS

"*Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts" (CEQA Guidelines § 15126.6[c]).*

7.2.1 Alternative Circulation Element – Roadway Classifications

The proposed Circulation Element as included in the GPU evolved over a long process and coordination with the Orange County Transportation Authority (OCTA). During this process, alternative packages of arterial roadway classifications were considered that involved roadways included in OCTA's Master Plan of Arterial Highways (MPAH). The majority of reclassifications proposed were identified for bicycle facility safety improvements in the City's Safe Mobility Santa Ana (SMSA) Plan prepared in 2016. Most of the reclassifications identified were for roadways where bicycle and pedestrian safety improvements would require roadway reconfiguration and a reduction in the number of existing or planned travel lanes. Many of the SMSA recommendations across the City have already been, or are in the process of being, implemented along arterial roadways without reducing the number of lanes.

A cursory review of two optional roadway reclassification packages was conducted to determine whether these optional plans would have the potential to eliminate significant impacts of the proposed GPU and meet most the project objectives. It was determined that a detailed evaluation of this alternative was not needed to provide a reasonable range of EIR project alternatives. Transportation/traffic impacts of the proposed project were determined to be less than significant (VMT/SP falls below the significance threshold for the GPU without mitigation). Although these alternatives may have some potential to reduce VMT (by reducing the number of travel lanes for some roadways) and thereby also potentially reduce air quality, greenhouse gas and traffic noise impacts, these alternatives would also result in more inconsistencies with the MPAH and result in more traffic congestion. Although traffic congestion is no longer a CEQA consideration, the GPU sets forth standards for level of service that will be considered by decision-makers. Moreover, the Reduced Density and RTP/SCS were

determined to provide meaningful alternatives to consider for the potential of reducing air quality, GHG and traffic noise impacts.

7.2.2 Reduced Traffic Noise Alternative

Since traffic noise was determined to be a significant, unavoidable impact of the proposed GPU, a project alternative designed to eliminate this significant impact was considered. The required reduction in traffic volumes (ADT) along roadways where buildout of the GPU would result in significant increases in noise were determined. These estimates were compared to the surrounding land uses which would generate ADTs for the respective roadway segments. Table 7.1, *Roadway Segments with Significant Traffic Noise Increases* lists the roadways that would experience significant noise impacts under the GPU. Traffic noise along these roadways would both exceed the noise standard and abut sensitive land uses (e.g., residences, schools, hospitals).

Table 7.1 Roadway Segments with Significant Traffic Noise Increases

Roadway	Segment	Existing ADT	Future 2045 ADT w/GPU	Existing Traffic Noise Level at 50 feet (dBA CNEL)	Future 2045 Traffic Noise Level at 50 feet w/GPU (dBA CNEL)	Traffic Noise Increase, dBA CNEL
Harbor Boulevard	Segerstrom Avenue to MacArthur Boulevard	47,125	56,900	71.9	77.6	**5.7**
ADT Reduction Required[1]			21,500			
Sensitive Receptors: Hotel						
Main Street	17th Street to 20th Street	32,044	43,000	72.5	74.1	**1.6**
ADT Reduction Required			42,000			
Sensitive Receptors: Church						
Segerstrom Avenue	Fairview Street to Raitt Street	19,326	29,600	71.2	73.6	**2.4**
ADT Reduction Required[1]			24,000			
Sensitive Receptors: Residences						
Bristol Street	Edinger Avenue to Warner Avenue	37,238	54,500	74.4	76.3	**1.9**
ADT Reduction Required[1]			50,000			
Sensitive Receptors: Schools and Residences						
Flower Street	Warner Avenue to Segerstrom Avenue	15,378	33,300	70.1	73.9	**3.8**
ADT Reduction Required[1]			19,500			
Sensitive Receptors: Residences						
Main Street	MacArthur Boulevard to Sunflower Avenue	23,692	29,000	73.1	74.7	**1.6**
ADT Reduction Required[1]			28,500			
Sensitive Receptors: Residences						

As summarized in the table, several segments would experience significant, unavoidable traffic noise impacts without the land use changes proposed under the GPU. Since significant traffic noise could not be avoided, further evaluation of this alternative was not deemed to be meaningful.

7.3 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS

- Given the significant, unavoidable impacts identified for the proposed GPU, project alternatives with the potential to substantially reduce development were identified for further review. Significant GPU impacts including long-term air quality impacts, GHG emissions and population and housing impacts, all directly relate to the level of development that would occur within the City. At the programmatic level of this GPU EIR, site specific information regarding potential significant historical impacts is not available, and therefore, an alternative could not be customized to reduce that impact. A reduced intensity alternative would also be expected to reduce the significant traffic noise impact (as discussed above). The following development alternatives to the proposed GPU were chosen for further analysis:

- **No Project/Current General Plan Alternative.** The evaluation of the No Project alternative is required by CEQA. The No Project alternative is typically defined as the development scenario that would occur if the project as proposed is not adopted. For a General Plan, the No Project alternative is typically represented by the jurisdiction's existing General Plan, including land use plan, circulation master plan, and policies included in each General Plan Element. Therefore, this alternative assumes that the existing General Plan (with various adoption dates for different elements between 1982 and 2014 would remain in effect. This existing General Plan also reflects amendments, including new Specific Plans and special zoning areas that have been adopted up through the Notice of Preparation for this GPU.

- **Reduced Intensity Alternative.** (Reduced Capacity for the 55 Fwy/Dyer and South Bristol Focus Areas). Under the GPU, the only areas that include revisions to land use designations to accommodate new growth are within the five focus areas. The majority of remaining growth, as detailed in Table 3-8 would occur within previously approved Specific Plans and Special Zoning areas. A nominal amount of growth is assumed to occur in other areas of the City and would not require land use amendments. The Reduced Intensity Alternative would substantially reduce development capacity within two focus areas, 55 Fwy/Dyer and South Bristol Street, that accommodate approximately 65 percent of the housing unit growth and 72 percent of the non-residential use (by building square footage), of the growth projected for the combined focus areas under the GPU. Section 3.3.2.5 *General Plan Buildout Scenario* provides a discussion of factors considered in determining assumed buildout densities for the GPU. For the focus areas the forecast buildout is based on development at approximately 80 percent of the maximum allowed development for each respective land use designation. For this alternative, development of the 55 Fwy/Dyer and South Bristol focus areas would be reduced to approximately 50 percent of the maximum allowed per the land use designations. As detailed in Table 7-5, this alternative would reduce housing units by a total of 5,383 and would reduce total building square footage by approximately 4.2 M square feet distributed between these two focus areas. This alternative would also reduce population by 19,825 and jobs by 9,184. Overall, this alternative would reduce the housing growth accommodated by the GPU land use changes by approximately 18 percent, and reduce non-residential building square footage by approximately 27 percent.

- **2020 RTP/SCS Consistency Alternative.** (Reduced development for RTP/SCS population/housing consistency). This alternative was developed to evaluate an update to the General Plan that would be consistent with the population and housing projections used to develop the Southern California Association of Regional Government's (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) now referred to as Connect SoCal (adopted May 7, 2020). Connect SoCal is a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals. The plan embodies a collective vision for the region's future and is developed with input from local governments, county transportation commissions, tribal governments, nonprofit organizations, businesses, and local stakeholders in the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. As evaluated in Section 5.13-7, *Population and Housing,* the proposed GPU would result in a significant population and housing impact because development under the GPU would substantially exceed the projections used in Connect SoCal. SCAG utilizes locally prepared population and housing projections to develop the regional plan. For the City of Santa Ana, those projections were provided by OC COG as prepared by the Center for Demographic Research (CDR). The population/housing figures reflected for Santa Ana in the regional plan for 2045 are: population, 360,100; total housing units: 80,100; and total jobs, 176,400. Projections for the RTP/SCS (Connect SoCal) utilize land use designations as approved in adopted General Plans. The employment projections are similar for the GPU and RTP/SCS scenarios, but the RTP/SCS projections for population and housing units are substantially lower than GPU projections (18 percent and 27 percent lower, respectively). The RTP/SCS alternative, therefore, represents the least development intensive project alternative evaluated for this Draft PEIR.

- This alternative would substantially reduce the growth that would be accommodated within the focus areas under the GPU. New growth within the focus areas would total 6,380 housing units and approximately 3.7 MSF non-residential uses, instead of a total additional 23,955 housing units and approximately 15.7 MSF within the focus areas. This alternative distributes anticipated development through the focus areas and the approved Specific Plans/Special Zoning areas. For purposes of this alternative, it is assumed that a development cap would be used to limit total growth to the projections shown.

- Subsequent updates of the regional plan would incorporate update land use from the GPU and resolve the substantial discrepancy between the population and housing projections. Note also that this Draft PEIR concludes that the GPU is consistent with the goals of the RTP/SCS (see Table 5.10-1). This alternative has been defined to eliminate the significant impact associated with substantial population growth that is inconsistent with the regional plan, as well as reduce other significant growth-related (AQ/GHG, traffic noise) impacts associated with the GPU as proposed.

Table 7-2 summarizes the three alternatives described above selected for evaluation. They have been determined to represent a reasonable range of alternatives that have the potential to feasibly attain most of the basic objectives of the GPU, but which may avoid or substantially lessen any of the significant effects.

Table 7-2 Project Alternatives Description

Alternative Description	Environmental Reasons Considered
Proposed Project The GPU is the comprehensive update of the Santa Ana General Plan. As detailed in Chapter 3, *Project Description,* land use changes in the proposed GPU focus on five areas within Santa Ana that offer opportunities for enhanced growth and flexibility and are suited to assist in achieving the core vision established for the GPU. These focus areas are: • South Main Street • Grand Avenue/17th Street • West Santa Ana Boulevard • 55 Freeway/Dyer Road • South Bristol Street	N/A
No Project/Current General Plan Alternative The buildout for the Current GP includes the full entitlement of the specific plan and special zoning areas. The current GP focuses more on employment growth in the focus areas instead of housing growth.	Required by CEQA
Reduced Intensity Alternative Development potential for the two focus areas with the greatest growth capacity under the GPU is reduced under this alternative to approximately 50 percent of the maximum densities allowed by their respective land use designations for both housing units and non-residential building square footage. The combined reduction for the 55 Freeway /Dyer Rd. and South Bristol Street focus areas under this alternative would be 5,383 housing units and 4.3 MSF. There would be no changes to any other proposed land use or to the Circulation Element under the Reduced Intensity Alternative in comparison to the proposed GPU, All other assumptions remain the same as for the proposed GPU.	Potential to reduce significant impacts related to: • Air Quality • Greenhouse Gas Emissions • Noise • Population and Housing
2020 RTP/SCS Consistency Alternative To achieve the lower projections reflected in the RTP/SCS, this alternative would substantially reduce the growth that would be accommodated within the focus areas under the GPU. Instead of a total additional 23,955 housing units and approximately 15.7 MSF within the focus areas, new growth within the focus areas would total 6,380 housing units and approximately 3.7 MSF non-residential uses (reducing the growth by over 70 percent for both housing and nonresidential building SF relative to the GPU for focus areas). New development would primarily take place through pipeline projects that are already approved within the Specific Plan and Special Zoning Districts. The total estimated buildout of these projects, however, could not be completely accommodated. As shown in Table 7-6, this alternative, therefore, distributes anticipated development through the focus areas and the approved Specific Plans/Special Zoning areas. For purposes of this alternative, it is assumed that a development cap would be used to limit total growth to the projections shown. Existing development entitlements would not be reduced, but development would be monitored and capped at the levels shown. The market would drive the precise location and timing of projects until the maximum cap was reached.	Potential to reduce significant impacts related to: • Population and Housing • Air quality • Greenhouse Gas Emissions • Noise

Notes:
MSF = Millions square feet.
RTP/SCS = Southern California Association of Government's Regional Transportation Plan and Sustainable Communities Strategy.

An EIR must identify an "environmentally superior" alternative and where the No Project Alternative is identified as environmentally superior, the EIR is then required to identify as environmentally superior an alternative from among the others evaluated. Each alternative's environmental impacts are compared to the GPU and determined to be environmentally superior, neutral, or inferior. Section 7.7 identifies the Environmentally Superior Alternative. The proposed GPU (preferred land use alternative) is analyzed in detail in Chapter 5 of this Draft PEIR.

7.3.1 Alternatives Comparison

The following statistical analysis provides a summary of general socioeconomic buildout projections for the three land use alternatives, and the proposed GPU. The analysis provides a buildout scenario that would occur if all the areas of the City were to develop to the probable capacities yielded by each, respective project alternative. Table 7-3 identifies Citywide information regarding housing unit, population and job projections, and also provides the resultant jobs-to-housing ratio for each alternative. Tables 7-4 through 7-6 provide detailed comparisons between the GPU and the proposed alternatives for housing units, non-residential square footage, and jobs; by focus area and Specific Plan/Special Zoning area.

Table 7-3 Project Alternatives – Socioeconomic Comparison

	General Plan Update	No Project/Current General Plan Alternative	Reduced Intensity Alternative	2020 RTP Population/Housing Consistency Alternative
Dwelling Units	115,053	101,858	109,670	83,538
Population	431,629	383,202	411,804	352,941
Jobs	170,416	182,003	161,232	172,545
Jobs-to-Housing Ratio	1.5	1.8	1.5	2.1

Table 7-4 No Project/Current General Plan vs. Proposed GPU – Buildout Comparison

	Proposed General Plan Update			No Project/Current General Plan			Net Difference		
PLANNING AREA	Housing Units	Bldg. Sq. Ft.[3]	Jobs	Housing Units	Bldg. Sq. Ft.[1]	Jobs	Housing Units	Bldg. Sq. Ft.[1]	Jobs
FOCUS AREAS	**23,955**	**15,684,285**	**35,044**	**10,760**	**18,350,142**	**46,631**	**-13,195**	**2,665,857**	**11,587**
55 Freeway/Dyer Road	9,952	6,142,283	13,302	2,730	6,518,616	19,145	-7,222	376,333	5,843
Grand Avenue/17th Street	2,283	703,894	1,622	517	2,419,688	5,360	-1,766	1,715,794	3,738
South Bristol Street	5,492	5,082,641	11,192	3,260	4,136,428	11,078	-2,232	-946,213	-114
South Main Street	2,308	946,662	2,151	1,641	2,428,499	4,947	-667	1,481,837	2,796
West Santa Ana Boulevard	3,920	2,808,805	6,777	2,612	2,846,911	6,101	-1,308	38,106	-676
SPECIFIC PLAN / SPECIAL ZONING	**20,524**	**16,958,445**	**39,702**	**20,524**	**16,958,445**	**39,702**	**0**	**0**	**0**
Adaptive Reuse Overlay Zone[2]	1,260	976,935	2,567	1,260	976,935	2,567	0	0	0
Bristol Street Corridor Specific Plan	135	143,139	282	135	143,139	282	0	0	0
Harbor Mixed Use Transit Corridor Specific Plan	4,622	1,967,982	1,578	4,622	1,967,982	1,578	0	0	0
MainPlace Specific Plan	1,900	2,426,923	5,380	1,900	2,426,923	5,380	0	0	0
Metro East Mixed-Use Overlay Zone	5,551	4,685,947	12,258	5,551	4,685,947	12,258	0	0	0
Midtown Specific Plan	607	1,818,253	4,615	607	1,818,253	4,615	0	0	0
Transit Zoning Code	6,449	4,939,266	13,022	6,449	4,939,266	13,022	0	0	0
ALL OTHER AREAS OF THE CITY[3]	**70,574**	**40,325,086**	**95,670**	**70,574**	**40,325,086**	**95,670**	**0**	**0**	**0**
CITYWIDE TOTAL	**115,053**	**72,967,816**	**170,416**	**101,858**	**75,633,673**	**182,003**	**-13,195**	**2,665,857**	**11,587**

Source: Santa Ana 2020.

[1] Only includes nonresidential building square footage.

[2] The figures shown on the row for the Adaptive Reuse Overlay represents parcels that are exclusively in the Adaptive Reuse Overlay boundary. Figures for parcels that are within the boundaries of both the Adaptive Reuse Overlay Zone and a specific plan, other special zoning, or focus area boundary are accounted for in the respective specific plan, other special zoning, or focus area.

[3] The City has included an assumption for growth on a small portion (five percent) of residential parcels through the construction of second units, which is distributed throughout the City and is not concentrated in a subset of neighborhoods. Additional growth includes known projects in the pipeline and an increase of 10 percent in building square footage and employment for the professional office surrounding the Orange County Global Medical Center and along Broadway north of the Midtown Specific Plan, as well as the commercial and retail area south of the West Santa Ana Boulevard focus area..

7. Alternatives to the General Plan Update

Table 7-5 Reduced Intensity Alternative vs. Proposed GPU – Buildout Comparison

PLANNING AREA	Proposed General Plan Update			Reduced Intensity Alternative			Difference		
	Housing Units	Bldg. Sq. Ft.[3]	Jobs	Housing Units	Bldg. Sq. Ft.[1]	Jobs	Housing Units	Bldg. Sq. Ft.[1]	Jobs
FOCUS AREAS	**23,955**	**15,684,285**	**35,044**	**18,572**	**11,474,939**	**25,860**	**-5,383**	**-4,209,347**	**-9,184**
55 Freeway/Dyer Road	9,952	6,142,283	13,302	6,220	3,838,927	8,987	-3,732	-2,303,356	-4,315
Grand Avenue/17th Street	2,283	703,894	1,622	2,283	703,894	1,622	0	0	0
South Bristol Street	5,492	5,082,641	11,192	3,841	3,176,651	6,323	-1,651	-1,905,990	-4,869
South Main Street	2,308	946,662	2,151	2,308	946,662	2,151	0	0	0
West Santa Ana Boulevard	3,920	2,808,805	6,777	3,920	2,808,805	6,777	0	0	0
SPECIFIC PLAN / SPECIAL ZONING	**20,524**	**16,958,445**	**39,702**	**20,524**	**16,958,445**	**39,702**	**0**	**0**	**0**
Adaptive Reuse Overlay Zone[2]	1,260	976,935	2,567	1,260	976,935	2,567	0	0	0
Bristol Street Corridor Specific Plan	135	143,139	282	135	143,139	282	0	0	0
Harbor Mixed Use Transit Corridor Specific Plan	4,622	1,967,982	1,578	4,622	1,967,982	1,578	0	0	0
MainPlace Specific Plan	1,900	2,426,923	5,380	1,900	2,426,923	5,380	0	0	0
Metro East Mixed-Use Overlay Zone	5,551	4,685,947	12,258	5,551	4,685,947	12,258	0	0	0
Midtown Specific Plan	607	1,818,253	4,615	607	1,818,253	4,615	0	0	0
Transit Zoning Code	6,449	4,939,266	13,022	6,449	4,939,266	13,022	0	0	0
ALL OTHER AREAS OF THE CITY[3]	**70,574**	**40,325,086**	**95,670**	**70,574**	**40,325,086**	**95,670**	**0**	**0**	**0**
CITYWIDE TOTAL	**115,053**	**72,967,816**	**170,416**	**109,670**	**68,758,470**	**161,232**	**-5,383**	**-4,209,347**	**-9,184**

Source: Santa Ana 2020.

[1] Only includes nonresidential building square footage.

[2] The figures shown on the row for the Adaptive Reuse Overlay represents parcels that are exclusively in the Adaptive Reuse Overlay boundary. Figures for parcels that are within the boundaries of both the Adaptive Reuse Overlay Zone and a specific plan, other special zoning, or focus area boundary are accounted for in the respective specific plan, other special zoning, or focus area.

[3] The City has included an assumption for growth on a small portion (five percent) of residential parcels through the construction of second units, which is distributed throughout the City and is not concentrated in a subset of neighborhoods. Additional growth includes known projects in the pipeline and an increase of 10 percent in building square footage and employment for the professional office surrounding the Orange County Global Medical Center and along Broadway north of the Midtown Specific Plan, as well as the commercial and retail area south of the West Santa Ana Boulevard focus area..

Table 7-6 2020 RTP Population/Housing Consistency Alternative vs. Proposed GPU – Buildout Comparison

	Proposed General Plan Update			2020 RTP Consistency Alternative			Difference		
PLANNING AREA	Housing Units	Bldg. Sq. Ft.[3]	Jobs	Housing Units	Bldg. Sq. Ft.[1]	Jobs	Housing Units	Bldg. Sq. Ft.[1]	Jobs
FOCUS AREAS	**23,955**	**15,684,285**	**35,044**	**6,380**	**13,421,155**	**28,428**	**-17,575**	**-2,263,130**	**-6,616**
55 Freeway/Dyer Road	9,952	6,142,283	13,302	1,221	5,666,453	8,898	-8,731	-475,830	-4,404
Grand Avenue/17th Street	2,283	703,894	1,622	561	1,400,741	3,568	-1,722	-696,847	-1,946
South Bristol Street	5,492	5,082,641	11,192	220	1,577,511	3,337	-5,272	-3,505,130	-7,855
South Main Street	2,308	946,662	2,151	1,720	1,685,978	3,455	-588	739,316	1,304
West Santa Ana Boulevard	3,920	2,808,805	6,777	2,658	3,090,472	9,170	-1,262	281,667	2,393
SPECIFIC PLAN / SPECIAL ZONING	**20,524**	**16,958,445**	**39,702**	**6,584**	**17,495,238**	**48,447**	**-13,940**	**536,793**	**8,745**
Adaptive Reuse Overlay Zone[2]	1,260	976,935	2,567	260	976,935	3,043	-1,000	0	476
Bristol Street Corridor Specific Plan	135	143,139	282	135	143,139	282	0	0	0
Harbor Mixed Use Transit Corridor Specific Plan	4,622	1,967,982	1,578	1,324	1,944,731	3,615	-3,298	-23,251	2,037
MainPlace Specific Plan	1,900	2,426,923	5,380	1,900	2,426,923	5,380	0	0	0
Metro East Mixed-Use Overlay Zone	5,551	4,685,947	12,258	844	3,094,749	9,255	-4,707	-1,591,198	-3,003
Midtown Specific Plan	607	1,818,253	4,615	607	1,885,065	4,824	0	66,812	209
Transit Zoning Code	6,449	4,939,266	13,022	1,514	7,023,697	22,048	-4,935	2,084,431	9,026
ALL OTHER AREAS OF THE CITY[3]	**70,574**	**40,325,086**	**95,670**	**70,574**	**40,325,086**	**95,670**	**0**	**0**	**0**
CITYWIDE TOTAL	**115,053**	**72,967,816**	**170,416**	**83,538**	**71,241,479**	**172,545**	**-31,515**	**-1,726,337**	**2,129**

Source: Santa Ana 2020.

[1] Only includes nonresidential building square footage.

[2] The figures shown on the row for the Adaptive Reuse Overlay represents parcels that are exclusively in the Adaptive Reuse Overlay boundary. Figures for parcels that are within the boundaries of both the Adaptive Reuse Overlay Zone and a specific plan, other special zoning, or focus area boundary are accounted for in the respective specific plan, other special zoning, or focus area.

[3] The City has included an assumption for growth on a small portion (five percent) of residential parcels through the construction of second units, which is distributed throughout the City and is not concentrated in a subset of neighborhoods. Additional growth includes known projects in the pipeline and an increase of 10 percent in building square footage and employment for the professional office surrounding the Orange County Global Medical Center and along Broadway north of the Midtown Specific Plan, as well as the commercial and retail area south of the West Santa Ana Boulevard focus area..

7. Alternatives to the General Plan Update

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7.3.2 Environmental Impact Comparison

Table 7-7, *Environmental Impact Comparison -Project Alternatives,* assesses the relative impact for each project alternative in comparison to the GPU. All of the environmental categories evaluated for the GPU in this Draft PEIR are compared. A determination is provided whether the impact is "less than" (LT), "greater than" (GT), or "similar to" (S) the respective environmental impact for the GPU. The table also provides a notation if an alternative is expected to eliminate a significant impact of the proposed project (reduce its severity to less than significant).

7. Alternatives to the General Plan Update

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Table 7-7 Environmental Impact Comparison

Impact	No Project/Current General Plan Alternative	Reduced Intensity Alternative	2020 RTP Consistency Alternative
Aesthetics	Under this Alternative fewer housing units and more non-residential square footage would be developed in the focus areas compared to the GPU. Land use designations and ultimate buildout outside of the focus areas would be the same as for the GPU . Overall, within the focus areas, the No Project alternative would be characterized by lower density and a reduced visual scale in comparison to the GPU. A discussion of the maximum densities and heights each of the five focus areas is provided below: • **Grand Avenue/17th Street.** The current General Plan allows density up to 1.0 FAR in General Commercial and Professional and Administrative Office designations (and up to 1.15 FAR is allowed in the Orange County Register site) and 7 du/acre in Low Density Residential designation and heights generally up to 35 feet above grade (not taking into account Specific Development districts within the focus area). • **55 Freeway/Dyer Road.** The current General Plan allows density up to 1.7 FAR in District Center designation and heights generally up to 35 feet above grade (not taking into account Specific Development districts within the focus area). • **South Bristol Street.** The current General Plan allows density up to 1.0 FAR in District Center and General Commercial designations and 15 du/acre in Medium Density Residential and heights generally up to 35 feet above grade (not taking into account Specific Development districts within the focus area). • **South Main Street.** The current General Plan allows density up to 1.0 FAR in the District Center and General Commercial designations and 7 du/acre in Low Density Residential designation and heights generally up to 35 feet above grade (not taking into account Specific Development districts and within the focus area). • **West Santa Ana Boulevard.** The current General Plan allows density up to 1.5 FAR in the Urban Neighborhood designation and 15 du/acre in the Medium Density Residential designation and heights generally up to 35 feet above grade (not taking into account Specific Development districts within the focus area). The GPU introduces new policies that would protect neighborhood character and landmarks as well as enhance new public spaces. In comparison to the current General Plan, the updated Circulation Element in the GPU reclassifies several arterials to provide new pedestrian and bikeway improvements. These improvements, along with implementing required design guidelines are expected to enhance the livability and character of several communities. Since this alternative would reduce building intensity and heights in the focus areas, it would be anticipated to reduce light and glare impacts. Overall, aesthetic impacts for the No Project alternative would be considered less than aesthetic impacts for the GPU. **LT**	In comparison to the proposed GPU, this alternative would only modify land uses within the 55 Freeway/Dyer Road and South Bristol Street focus areas. Housing units and non-residential building space would both be reduced by approximately 30-35 percent relative to the GPU land uses for these two focus areas. Design guidelines and amenity requirements would be assumed not to change in comparison to the GPU. Similarly, the Circulation Element and associated roadway classification, bike, pedestrian and mass transit improvements and policies would be the same as for the GPU. The visual impact of this alternative, therefore, would be limited to two focus areas and would be expected to reduce both the overall footprint of development and building heights within these two areas (by approximately 30 percent relative to the GPU). Light and glare impact within the 55 Freeway /Dyer and South Bristol Street focus areas could also be expected to be reduced to some degree. Overall, however, the aesthetics impacts Citywide would be similar to the proposed GPU. **S**	Overall, this Alternative would substantially reduce development capacity, particularly for housing, relative to the proposed GPU. Citywide it would result in a 73 percent reduction in housing units at buildout, and an approximate 14 percent reduction in non-residential building space. As shown in Table 7-6, this alternative assumes that densities would be reduced throughout the City, including previously approved Specific Plan and Special Districts. Development intensity would be reduced within all the focus areas as well, resulting in a 27 percent reduction in allowed housing units in the focus areas and an approximate 2.5 percent reduction in non-residential uses. In comparison to the GPU this alternative, and visual character, would be much less residential. Approximately 17,500 fewer housing units would be built in the combined focus areas in comparison to the GPU. The approximate 6,300 new units that would be accommodated would be expected to be in lower profile buildings. The change in non-residential space would not be as great, but would be substantially different for some areas in comparison to the GPU. Approximately 3.5 M SF less would be accommodated within the South Bristol Street focus area. This would limit the vision for this area as a new District Center and Urban Neighborhood. This Alternative, however, would increase building square footage in the South Main Street and West Santa Ana Boulevard focus areas. Therefore, impacts to visual appearance would be reduced compared to the GPU. It is difficult to categorize the relative aesthetic impact of this alternative in comparison to the GPU. Development would be substantially reduced but also very different. It would dramatically reduce residential units Citywide (by 31,515 units) in comparison to the GPU and slightly increase non-residential space (approximately 2,000 SF) in comparison to the GPU. The limited new development in focus areas (and in comparison to the current General Plan) would limit opportunities and available funding to support some major amenities that would benefit aesthetics. Overall, for purposes of this Draft PEIR the relative impact of this alternative has been determined to be similar. In reality the character would be substantially different, and not necessarily result in an impact 'less' or 'greater' than the proposed GPU. **S**
Agriculture Resources	The City is a highly urbanized area with its entire area nearly built out. Furthermore, according to the California Resource Agency's Department of Conservation, the City does not have any significant agricultural resources. Therefore, no impacts to farmland would occur under the proposed project and no further analysis is required in the DEIR. The has land designated or zoned for agricultural use but these lands constitute a very small percentage of the area of Santa Ana and are located mainly in the outskirts of the City in the north and northeast and outside the focus areas. Furthermore, the City does not have any land designated or zoned for forestland, timberland, or timberland production. There would be no impacts from this alternative on agriculture, similar to the GPU. **S**	This alternative, similar to the No Project/Current General Plan alternative and the GPU, would have less than significant impacts to agricultural resources. **S**	This alternative, similar to the No Project/Current General Plan alternative and the GPU, would have less than significant impacts to agricultural resources. **S**

Table 7-7 Environmental Impact Comparison

Impact	No Project/Current General Plan Alternative	Reduced Intensity Alternative	2020 RTP Consistency Alternative
Air Quality	In comparison to the GPU, the No Project alternative is characterized by 1) More employment and 2) less housing development in the City. • The current General Plan is the basis for the SCAG growth model and therefore would not exceed the SCAG forecasts; however, as with the GPU, the substantial growth projected at buildout would exceed South Coast AQMD's AQMP regional significance thresholds, resulting in a significant, unavoidable impact. • Due to a substantial increase in employment (approximately an additional 12,000 in comparison to GPU buildout) as well as more dispersed housing in comparison to the proposed GPU, this alternative may increase vehicle miles traveled, and related traffic air quality emissions. However, the GPU contains policies that would encourage mixed use and infill development near focus areas and major travel corridors and would ultimately reduce VMT within the City. • Housing growth and a larger nonresidential building footprint could also result in exposing a greater number of sensitive receptors to pollutants concentrations from construction activity and other sources. The land uses that have the potential to create objectionable odors would remain the same, causing a similar impact as existing conditions. **GT**	This alternative would reduce housing development and non-residential development projects within two focus areas of the City, resulting in fewer residents (by approximately 4 percent) and employees (by approximately 5.5 percent) compared to the GPU. • Decreasing the residential and nonresidential development footprint would decrease pollutants produced during construction and would decrease the amount energy used in homes and businesses. • This alternative would reduce vehicle miles traveled, and related traffic air quality emissions. • Decreased development footprint in the City may reduce exposure of sensitive receptors to pollutant concentrations. • The land uses that have the potential to create objectionable odors would remain the same, causing a similar impact as existing conditions. Although this alternative reduces impacts, the reduction would not eliminate a significant impact of the GPU. **LT (**impact would remain significant)	This alternative would limit new development in the City to reflect consistency with the 2020 RTP/SCS projections. It would substantially reduce housing units and population, and moderately increase non-residential uses and employees. • Decreasing the residential development footprint would decrease pollutants produced during construction and would decrease the amount energy used in homes. • Fewer people living in the City would generate fewer vehicle trips and reduce transportation emissions, reducing air quality impacts. • The land uses that have the potential to create objectionable odors would remain the same, causing a similar impact as existing conditions. Although this alternative would reduce Air Quality s impacts it would not result in a significant impact of the GPU. **LT (**impact, however, would remain significant)
Biological Resources	In comparison to the GPU, the No Project alternative would be similarly characterized by infill development in a relatively built out City. Whereas the GPU does include the development of more housing units, the No Project alternative includes more non-residential square footage, and housing units that are less densely developed and occupy larger lots. Therefore, it is anticipated that the resulting disturbance of land and biological resources would be similar. Furthermore, the open space and park areas would remain under the No Project alternative as well as the GPU. Therefore, impacts to biological resources would be similar **S**	This alternative reduces housing units and non-residential square footage in the 55 Freeway/Dyer Road and South Bristol Street focus areas. All other assumptions remain the same. The reduced development in two focus areas could result in a reduction of land disturbance, but alternatively, could result in lower profile development with larger building footprints. Overall disturbance would likely be similar to the proposed GPU. Moreover, the two subject focus areas are not characterized by native vegetation or sensitive habitat or species. The impact to biological resources would be similar to the proposed GPU. **S**	This alternative would substantially reduce housing development in the City and moderately reduce non-residential development. As with the proposed GPU, sensitive resources (such as Santiago Creek) would be protected. The reduction in land development and related land disturbance, however, could be expected to reduce the potential to impact biological resources. **LT**
Cultural Resources	In comparison to the GPU, the No Project alternative would result in a moderate increase to non-residential building square footage, and fewer housing units. With the exception of focus areas, however, land use designations and development potential would be the same as for the GPU. The potential to impact archaeological resources would be similar. As with the GPU, cultural resource impacts to historical resources would remain significant and unavoidable even with the implementation of the 1997 GP Land Use Element EIR mitigation measures. **S**	This alternative would result in less growth in the 55 Freeway/Dyer Road and South Bristol Street focus areas with all other assumptions remaining the same. Therefore, this alternative would have a slightly less impact on land disturbance and subsequently on cultural resources. **LT (**potential impact to historical resources, however, would remain significant)	The substantial reduction in development under the RTP/SCS alternative would reduce land disturbance and be expected to reduce the potential to impact cultural resources, including archaeological and historical resources. Potential impacts to historical resource, however, would remain significant. **LT (**potential impact to historical resources, however, would remain significant)
Energy	This alternative would result in an increase of approximately 2.6 M SF of nonresidential building square feet (approximately 3.5 percent increase in comparison to GPU) and a substantial reduction in allowable residential units compared to the GPU (13,195 fewer units). This alternative would reduce housing energy use and increase non-residential building use in comparison to the GPU. It may reduce vehicle miles traveled and related fuel use. The No Project alternative would not include GPU policies to support the state's transition to a carbon neutral economy. Overall, this alternative would increase energy in some areas and decrease other energy needs. Overall energy impacts would be considered similar to the GPU. **S**	This alternative reduces new housing development and other non-residential development in two focus areas: 55 Freeway /Dyer Road and South Bristol Street. This alternative would therefore, reduce housing and non-residential building energy use. Additionally, this alternative may decrease vehicle miles traveled, and related fuel use. Overall this alternative would decrease energy impacts relative to the GPU; and as with the GPU, would be less than significant. **LT**	This alternative limits new development in the City to reflect consistency with the 2020 RTP/SCS projections. This alternative would result in a substantial reduction in residential units and a slight increase in nonresidential building square footage in the city. As a result, this alternative would reduce vehicle miles traveled and related energy use. This alternative would decrease energy use compared to the GPU, and as with the GPU, would be less than significant. **LT**

Table 7-7 Environmental Impact Comparison

Impact	No Project/Current General Plan Alternative	Reduced Intensity Alternative	2020 RTP Consistency Alternative
Geology and Soils	Similar to the GPU, the No Project alternative would be similarly characterized by infill development in a relatively built out City. In comparison to the GPU, the No Project alternative would result in a moderate increase in non-residential building square footage, and fewer housing units. With the exception of focus areas, however, land use designations and development potential would be the same as for the GPU Whereas the GPU does include the development of more housing, the No Project alternative includes more non-residential square footage and housing units that are less densely developed and occupy larger lots. Therefore, it is anticipated that the resulting disturbance of land would be similar. Exposure of new development to geological and soils hazards, including seismic shaking, landslides, erosion, liquefaction, and land subsidence, would be similar to the GPU. And as with the GPU, geotechnical and soils hazards would be mitigated to less than significant with implementation of existing regulatory measures, including compliance with the California Building Codes and National Pollutant Discharge Elimination System (NPDES) requirements and best management practices. Furthermore, as with the GPU, paleontological resource impacts would be mitigated to less than significant per the adopted mitigation in the 1997 GP Land Use Element EIR. **S**	This alternative reduces new housing development and other non-residential development in two focus areas: 55 Freeway /Dyer Road and South Bristol Street. It would be expected to reduce potential geotechnical hazards associated with development in these focus areas also expose fewer residents and employees As with the GPU, this alternative would comply with the same regulations summarized under the No Project/Current General Plan alternative. Impacts would be slightly less than the GPU. **LT**	The substantial reduction in development potential under the RTP/SCS alternative would reduce land disturbance and related, potential geotechnical hazards. Fewer residents and employees would be exposed to geotechnical and soils-related hazards. As with the GPU, this alternative would comply with the same regulations summarized under the No Project/Current General Plan alternative. Impacts would be slightly less than the GPU. **LT**
Greenhouse Gas Emissions	START HERE Development within the City would comply with existing GHG regulations, CARB's Scoping Plan, and the City's Climate Action Plan adopted in December 2015. The increase in employment as well as more dispersed housing in comparison to the GPU would increase vehicle miles traveled and related GHG emissions in comparison to the GPU. This alternative, however, reduces the total housing units by approximately 13,000 units, which would reduce GHG emissions In comparison to the No Project alternative, however, the GPU contains policies that would encourage mixed use and infill development near focus areas and major travel corridors and would ultimately reduce VMT within the City. Overall GHG emissions would likely be greater under the No Project Alternative, and as with the proposed project would be significant and unavoidable.. **GT**	This alternative reduces new housing development and other non-residential development in two focus areas: 55 Freeway /Dyer Road and South Bristol Street. It would result in fewer residents and employees in comparison to the GPU. This alternative would reduce VMT in comparison to the GPU as well as reduce GHG emissions generated by building energy use. Overall, this alternative would reduce GHG impacts relative to the GPU, but the GHG impact would remaining significant and unavoidable. **LT (impact would remain significant)**	This alternative would limit new development in the City to reflect consistency with the 2020 RTP/SCS projections. It would substantially reduce housing units and population, and moderately increase non-residential uses and employees. It would reduce VMT generated GHG emissions as well as building energy emissions. It would decrease GHG emissions compared to the GPU, but the GHG impact would remaining significant and unavoidable. **LT (impact would remain significant)**
Hazards and Hazardous Materials	As with the GPU, the transport, use and storage of hazardous materials would be mitigated by comprehensive regulations. Similarly, airport-related safety hazards would be mitigated by compliance with regulations and the County's Airport Land Use Commission. The overall hazards impacts would therefore be similar to the GPU, and as with the GPU, would be less than significant. **S**	As with the GPU, the transport, use and storage of hazardous materials would be mitigated by comprehensive regulations. Similarly, airport-related safety hazards would be mitigated by compliance with regulations and the County's Airport Land Use Commission. The overall hazards impacts would therefore be similar to the GPU, and as with the GPU, would be less than significant. **S**	As with the GPU, the transport, use and storage of hazardous materials would be mitigated by comprehensive regulations. Similarly, airport-related safety hazards would be mitigated by compliance with regulations and the County's Airport Land Use Commission. The overall hazards impacts would therefore be similar to the GPU, and as with the GPU, would be less than significant. **S**
Hydrology and Water Quality	In comparison to the GPU, the No Project alternative would be similarly characterized by infill development in a relatively built out City. Therefore, impacts to hydrology and water quality would be minimal. Furthermore, the open space and park areas would remain under the No Project alternative. As with the GPU, development under the current General Plan would be subject to the myriad of regulations that control potential flooding and water quality impacts. These include NPDES, which regulates discharges into waters of the United States and mandates MS4 permits (regulating municipal storm sewer systems) and Storm Water Pollution Prevention Plans (SWPPPs) requiring implementation of best management practices for potential surface water and water quality impacts related to project construction. Additionally, the No Project alternative would be subject to flood hazard development reviews in compliance with Chapter 7 (Floodplain Management Regulations) of the City's municipal code. Hydrology impacts, therefore, would be similar to the GPU. **S**	The reduced intensity alternative is a reduced version of the GPU. It would reduce new housing development and other non-residential development in two focus areas: 55 Freeway /Dyer Road and South Bristol Street. These areas are already developed and decreasing the intensity of development in these areas would not be expected to measurably alter pervious area and related stormwater runoff. As with the GPU, this alternative would comply with the same regulations summarized under the No Project/Current Impacts would be similar to the GPU. **S**	The substantial reduction in development potential under the RTP/SCS alternative would reduce land disturbance and potentially preserve more existing pervious land area, thereby decreasing stormwater flows relative to the GPU. This reduction, however, would likely be minimal and not change the overall level of the hydrology and water quality impact in comparison to the GPU. The 2020 RTP Consistency alternative would comply with the regulations as summarized under the No Project/Current General Plan alternative. These regulations would mitigate the hydrology and water quality impact to less than significant. Impacts would be similar to the GPU. **S**

Table 7-7 Environmental Impact Comparison

Impact	No Project/Current General Plan Alternative	Reduced Intensity Alternative	2020 RTP Consistency Alternative
Land Use and Planning	As with the GPU, the No Project alternative would divide established communities and comply with the Airport Environs Land Use Plan (AELUP). The No Project alternative, however, lacks policies (and related land use changes) that promote the goals of SCAG's 2020-2045 RTP/SCS such as: • Encouraging the development of diverse housing types in areas that are supported by multiple transportation options. • Supporting healthy and equitable communities. • Increasing person and goods movement and travel choices within the transportation system. • Reduce greenhouse gas emissions and improve air quality. • Adapt to a changing climate and support an integrated regional development pattern and transportation network. The GPU evolved to concentrate development in new areas to take advantage of mass transit and provide for mixed- use opportunities. Furthermore, the updated circulation element aimed at creating complete streets across the City to promote multi-modal transportation and decrease VMT. Therefore, the No Project alternative would have a greater impact to land use and planning. **GT**	As with the GPU, the No Project alternative would divide established communities and would comply with the Airport Environs Land Use Plan (AELUP). This alternative reduces new housing development and other non-residential development in two focus areas: 55 Freeway /Dyer Road and South Bristol Street. Under the GPU, these focus areas were designed to introduce higher intensity urban development and take advantage of their locations relative to mass transit improvements and service and existing opportunities to integrate and expand other major activity areas (South Coast Metro). The substantial reduction in opportunities for these areas would not as effectively meet the City's land use objectives of the regional RTP/SCS goals. Overall, this alternative would increase land use and planning impacts. **GT**	As with the GPU, the No Project alternative would divide established communities and would comply with the Airport Environs Land Use Plan (AELUP). Although developed to be consistent with the RTP/SCS population and housing projections (to eliminate the significant population impact of the GPU), this alternative, coincidentally would not be nearly as effective as the proposed GPU in achieving the regional RTP/SCS goals and objectives (as described under the No Project alternative). It would not provide the opportunities to optimize multi-modal transportation and new mixed-use, urban communities. Overall, this alternative would increase land use and planning impacts. **GT**
Mineral Resources	Given that the entire City does not have mineral resource sectors and no active or inactive mines, implementation of the No Project alternative, similar to the GPU, would not cause a loss of availability of known mineral resources. Overall, the impact to mineral resources would be similar to the GPU and would be less than significant. **S**	This alternative, similar to the No Project/Current General Plan alternative and the GPU, would have less than significant impacts to mineral resources. **S**	This alternative, similar to the No Project/Current General Plan alternative and the GPU, would have less than significant impacts to mineral resources. **S**
Noise	The No Project alternative would result in a substantial increase in employment as well as more dispersed housing in comparison to the GPU. Approximately 13,000 fewer housing units would be constructed. Therefore, this alternative may increase vehicle miles traveled, and related traffic noise impacts. The higher anticipated building square footage under the No Project alternative would result in more construction activity, but the construction activity would be more spread out. Construction-related noise is a highly localized impact and the severity of impacts depends on the equipment used, distance to nearby sensitive receptors, time of day, and overall duration of construction. Impacts would be similar to the GPU. As with the GPU, both construction and traffic noise impacts would be significant and unavoidable. **S**	The reduction of both housing units and jobs would reduce both construction noise and traffic-related impacts for the Reduced Intensity alternative. Although these impacts would be decreased, particularly in the 55 Freeway/Dyer Road and South Bristol Street focus areas, it is not anticipated that impacts would be reduced to less than significant, and these impacts would remain significant and unavoidable. **LT (construction and traffic noise, however, would remain significant)**	This alternative limits new development in the City to reflect consistency with the 2020 RTP/SCS projections. This alternative would result in a substantial reduction in residents and a slight increase in employees in the City, which would reduce both construction noise and traffic-related impacts. Although these impacts would be decreased, it is not anticipated that impacts could be reduced to less than significant, and these impacts would remain significant and unavoidable. **LT (construction and traffic noise, however, would remain significant)**
Population and Housing	The No Project alternative would result in an 11 percent decrease in population at buildout in comparison to the GPU. However, like the GPU, the population and household projections for the No Project alternative exceed the Orange County regional council of governments (COG) and the 2020/2045 RTP/SCS projections and would result in a significant and unavoidable impact. **LT (the population impact would remain significant)**	The reduced intensity would reduce new housing development and other non-residential development in two focus areas: 55 Freeway /Dyer Road and South Bristol Street. This alternative would reduce population by 5,383 persons and housing units by 19,825 units in comparison to the GPU. The resultant population and housing 2045 projections would still substantially exceed the Orange County COG and 2020/2045 RTP/SCS projections for the City. Therefore, population growth would be substantial and similar to the GPU and would be significant and unavoidable. **LT (the population impact would remain significant)**	This alternative reduces population growth in the City so that the 2045 population is less than the population projected by the Orange County COG and the 2020-2045 RTP/SCS. The Orange County COG projects a 2045 population of 360,077 for the City while the 2020-2045 RTP/SCS projects a population of 360,100. Therefore, population and housing impacts associated with this alternative is less than the GPU. Additionally, this impact reduces a significant and unavoidable impact to less than significant. **LT (eliminates a significant and unavoidable impact)**
Public Services	Relative to the GPU, the No Project alternative would result in an approximate 7 percent increase in employment opportunities and an 11 percent decrease in residents citywide. Since employment centers generate fewer calls for police and fire services than residential uses and do not directly generate increased school or library needs, public service impacts would be reduced under the No Project alternative relative to the GPU.	This alternative would reduce development capacity in the 55 Fwy/Dyer Road and South Bristol Street focus areas. The land use change would result in a 5,383 reduction in housing units and a population reduction of 19,825 Citywide. Public service demands, therefore, would be reduced, although not substantially, relative to the proposed GPU.	In comparison to the GPU, this alternative would reduce population by 18% percent and would result in a very slight increase in employment (1 percent) citywide. Since employment centers generate fewer calls for police and fire services and do not directly generate increased school or library needs this alternative would reduce service demands and overall impacts relative to the GPU.

Table 7-7 Environmental Impact Comparison

Impact	No Project/Current General Plan Alternative	Reduced Intensity Alternative	2020 RTP Consistency Alternative
	LT	**LT**	**LT**
Recreation	The No Project alternative would reduce the resident population by 11 percent compared to the GPU which would reduce the open space and recreational facility demand relative to the GPU. Overall, similar to the GPU, impacts of this alternative to recreation would be less than significant. **LT**	This alternative would substantially reduce development within the 55 Freeway /Dyer and South Bristol St. focus area relative to the GPU. Combined, housing units within these two areas would be reduced 5,383 units, resulting in an overall City population decrease of approximately 5 percent compared to the GPU. This alternative would particularly reduce recreation demand within the respective focus areas. Overall the recreation impact would be less than the GPU. **LT**	This alternative would reduce population by 18 percent and would result in a decrease in demand on existing parks and a decreased need for new parks compared to the GPU. The reduced housing units and related recreation facility demand would be distributed through all the focus areas and several of the Specific Plan areas under this alternative. **LT**
Transportation and Traffic	As detailed in the Traffic Impact Study, the Vehicle Miles Traveled (VMT) for the 2045 No Project scenario for the City is 12,163,794 (with a VMT/SP of 22.8). The VMT for the City in 2045 with the implementation of the GPU is 1,518,959 (with a VMT/SP of 20.3). Several factors would result in a greater VMT impact for the No Project alternative in comparison to the GPU. The No Project alternative has more non-residential square footage and lower density residential uses. In comparison, the GPU was developed to optimize multi-model transportation and introduces higher density residential and mixed-use land uses proximate to mass transit opportunities. In addition to land use changes, numerous new policies facilitate reduced auto trips and improved alternative transportation improvements. The VMT for the No Project alternative would increase impacts relative to the GPU. It would result in a VMT/SP of 22.8 compared to 20.3 for the GPU. Since 22.8 exceeds the significance threshold of 22.0 adopted by the City, it would result in a significant new impact. **GT (**introduces a new significant impact in comparison to the GPU)	In comparison to the GPU, this alternative would reduce housing and non-residential uses in the South Bristol Street and 55 Freeway/Dyer Road focus areas and result in a decrease in the VMT/SP. **LT**	Because this alternative would reduce population by approximately 18 percent and result in a slight increase in employment (1 percent) in comparison to the GPU, it would be expected to reduce total VMT. Although total VMT would be reduced, this alternative would be expected to increase VMT/SP the metric used to determine the significance of transportation impacts. The reduction in housing would reduce opportunities in areas under adopted Specific Plans and focus areas that have been planned to maximize multi-modal opportunities, thereby reducing VMT/SP. VMT/SP would be greater than the proposed GPU, thereby increasing transportation impacts relative to the proposed GPU. If the VMT/SP exceeded 20.3, it would introduce a new significant impact. Without extensive modeling, it is unknown the actual VMT/SP that would result. Unlike the No Project alternative, however, this alternative would be assumed to include the new transportation-related policies in the GPU and the updated Circulation Element that would serve to reduce VMT/SP. **GT**
Tribal Cultural Resources	In comparison to the GPU, the No Project alternative would be characterized by less dense residential development on larger lots and increased non-residential square footage. However, the GPU introduces more housing units in the focus areas resulting in similar land disturbance overall and thus a similar potential to impact tribal cultural resources. The 1997 GP Land Use Element EIR does not include a discussion of tribal cultural resources, but any development pursuant to the No Project alternative that would require a General Plan amendment would need to abide by the regulatory requirements of AB 52 and the cultural resources mitigation measures in the 1997 GP Land Use Element EIR. As with the GPU, tribal cultural resource impacts would be mitigated to less than significant. **S**	This alternative would result in less growth in the 55 Freeway/Dyer Road and South Bristol Street focus areas with all other assumptions remaining the same. Therefore, this alternative would have a slightly less impact on land disturbance and subsequently on tribal cultural resources. **LT**	This alternative includes a growth cap on development in the City compared to the GPU. Less development would equate to less land disturbance and slightly decreased impacts to tribal cultural resources. **LT**
Utilities and Service Systems	Relative to the GPU, the No Project alternative would include increase non-residential square footage and decrease dwelling units citywide. Since residential use is associated with a higher water demand, and higher sewage generation the No Project alternative would result in an overall decrease of approximately 38% in demand for these services compared to the GPU. Additionally, the No Project alternative would generate 4.5 million pounds per day of solid waste at buildout, which is 43% more than the GPU since non-residential use generates more solid waste than residential use. This additional waste generation could still be accommodated by the existing landfills. Furthermore, this alternative would result in a minimal increase to electricity use and a 3% decrease in natural gas use compared to the GPU. Since the No Project alternative would decrease water demand, wastewater generation, and natural gas consumption and would increase solid waste generation. Impacts of this alternative are less than the GPU. **LT**	This alternative would reduce population and jobs by approximately 5 percent in comparison to the GPU. It would therefore, reduce utility impacts, although not substantially, relative to the proposed project. **LT**	This alternative would reduce housing by 27 percent, non-residential square footage by approximately 1 percent Therefore water demand, wastewater generation, solid waste generation, and electricity and natural gas demands would all be less for this alternative. **LT**

7. Alternatives to the General Plan Update

Table 7-7 Environmental Impact Comparison

Impact	No Project/Current General Plan Alternative	Reduced Intensity Alternative	2020 RTP Consistency Alternative
Wildfire	The nearest Fire Hazard Safety Zone to the City is about 3.8 miles at the southern tip of the Peters Canyon Regional Park. Therefore, the City is not in or near state responsibility areas or lands classified as very high fire hazard severity zones. Additionally, no area within the City is a Wildland-Urban Interface. Therefore, this alternative, like the GPU, would have no impacts **S**	This alternative, similar to the No Project/Current General Plan alternative and the GPU, would have less than significant impacts from wildfires. **S**	This alternative, similar to the No Project/Current General Plan alternative and the GPU, would have less than significant impacts from wildfires. **S**

7.3.3 Environmental Impact Conclusion

Table 7-8 summarizes the environmental impacts of each alternative compared to the proposed project.

Table 7-8 Summary of Proposed Project and Alternatives Impacts

Topic	General Plan Update	No Project/Existing General Plan	Reduced Intensity	2020 RTP/SCS Consistency
Aesthetics	LTS	-	=	=
Agricultural Resources	LTS	=	=	=
Air Quality	S/U	+	-	-
Biological Resources	LTS/M	=	=	-
Cultural Resources	S/U	=	-	-
Energy	LTS	=	-	-
Geology and Soils	LTS/M	=	-	-
Greenhouse Gas Emissions	S/U	+	-	-
Hazards and Hazardous Materials	LTS	=	=	=
Hydrology and Water Quality	LTS	=	=	=
Land Use and Planning	LTS	+	+	+
Mineral Resources	LTS	=	=	=
Noise	S/U	=	-	-
Population and Housing	S/U	-	-	-
Public Services	LTS	-	-	-
Recreation	LTS	-	-	-
Transportation	LTS	+	-	+
Tribal Cultural Resources	LTS/M	=	-	-
Utilities and Service Systems	LTS	-	-	-
Wildfire	LTS	=	=	=

Notes: LTS = Less than Significant; LTS/M = Less than Significant with Mitigation Incorporated; S/U = Significant and Unavoidable
(-) The alternative would result in less of an impact than the proposed project.
(+) The alternative would result in greater impacts than the proposed project.
(=) The alternative would result in the same/similar impacts as the proposed project.

No Project/Current General Plan Alternative. This alternative would result in similar impacts to 11 impact categories, reduced impacts to 5 environmental impacts, and increase impacts to 4 categories. Impacts would be similar for agricultural resources, biological resources, cultural resources, energy, geology and soils, hazards and hazardous materials, hydrology and water quality, mineral resources, noise, tribal cultural resources, and wildfire. This alternative would reduce impacts for aesthetics, population and housing, public services,

recreation, and utilities and service systems. Impacts to air quality, greenhouse gas emissions, land use and planning, and transportation would increase. This alternative does not mitigate any of the significant and unavoidable impacts associated with the GPU to a less than significant impact. It would also exceed the City's VMT threshold. Overall, impacts under this alternative would decrease in comparison to the proposed project.

Reduced Intensity Alternative. This alternative would result in similar impacts to 7 impact categories, reduce impacts to 12 categories and increase impacts to one category. Impacts would be similar for aesthetics, agricultural resources, biological resources, hazards and hazardous materials, hydrology and water quality, mineral resources, and wildfire. This alternative would decrease impacts to air quality, cultural resources, energy, geology and soils, greenhouse gas emissions, noise, population and housing, public services, recreation, tribal cultural resources, transportation, and utilities and services It would be expected to increase land use and planning impacts relative to the GPU. As with the GPU, impacts to air quality, cultural resources, greenhouse gas emissions, noise, and population and housing would remain significant and unavoidable. Overall, impacts under this alternative would be decreased in comparison to the proposed project.

2020 RTP/SCS Consistency Alternative. This alternative would reduce impacts to 12 environmental impacts, result in similar impacts to six categories, and increase impacts to one category. It would reduce impacts to air quality, biological resources, cultural resources, energy, geology and soils, greenhouse gas emissions, noise, population and housing, public services, recreation, tribal cultural resources, and utilities and service systems. Impacts would be very similar for aesthetics, agricultural resources, hazards and hazardous materials, hydrology and water quality, mineral resources, and wildfire. It would increase impacts to land use and planning. It would also increase impacts to transportation and potentially introduce a new significant impact. It is anticipated, however, that under this alternative, transportation could be mitigated to less than significant. Under the GPU, transportation impacts are less than significant without mitigation. As with the GPU, impacts to air quality, cultural resources, greenhouse gas emissions, and noise would remain significant and unavoidable. The impact to population and housing would be reduced to less than significant. Overall, impacts under this alternative would be reduced in comparison to the proposed project.

7.3.4 Ability to Achieve Project Objectives

The determination of whether an alternative achieves a particular objective is not black or white. Each alternative has the potential to achieve the respective objective to some extent. None of the alternatives would optimize housing (including affordable housing) and transportation objectives to the extent of the GPU. The table shows 'maybe' if it is possible to achieve the specific objective, but the feasibility to do so is uncertain or the level of achievement marginal. Table 7-9 summarizes each alternative's ability to achieve the project objectives.

Table 7-9 Ability of Each Alternative to Meet the Project Objectives

Objective	General Plan Update	No Project/Current General Plan	Reduced Density	2020 RTP/SCS Consistency
1. Promote infill development while respecting and protecting established neighborhoods.	Yes	Yes	Yes	Maybe
2. Optimize high density residential and mixed-use development that maximizes potential use of mass transit.	Yes	No	No	No
3. Provide locations for new housing development that maximizes affordable housing opportunities to achieve both City and regional housing goals	Yes	No	Maybe	No
4. Facilitate new development at intensities sufficient to generate community benefits and attract economic activity.	Yes	No	Maybe	No
5. Provide housing and employment opportunities at an urban level of intensity at the City's edge	Yes	No	Maybe	No
6. Introduce mixed-use urban villages and encourage experiential commercial uses that are more walkable, bike-friendly and transit-oriented	Yes	Yes	Yes	No
7. Develop opportunities for live/work, artist spaces, and small-scale manufacturing	Yes	Maybe	Yes	Maybe

No Project/Current General Plan. The No Project/Current General Plan alternative, as shown in Table 7-9, would not achieve many of the proposed projects objectives. The existing land use plan does not provide the opportunities to provide housing and employment at the levels required to meet local and regional goals. Moreover, the No Project alternative would not provide numerous General Policies as included in the GPU to achieve these goals and invigorate communities. The current General Plan, however, protects established neighborhoods and several Specific Plans and Special Zoning areas would provide for infill opportunities, protect established neighborhoods, and would result in mixed-use villages and bike- and pedestrian friendly communities.

Reduced Density Alternative

The Reduced Density Alternative reduces the level of development for two of the five focus areas (55 Fwy/Dyer Road and South Bristol Street) relative to the GPU. No other changes to the GPU are made for this alternative. It is assumed to include the same General Plan policies and would not modify the Circulation Element or related improvements. As such, this alternative would attain many of the project's objectives. It would not 'optimize' high density housing and mass transit opportunities, and as such was found not to attain objective No. 2. It would, however, achieve objectives No's 3-5, but to a lesser extent than the proposed GPU. With the reduced opportunities in the 55 Freeway /Dyer Road and South Bristol focus areas, it would not be as effective in providing affordable housing opportunities, and may not be as economically feasible in terms of

funding communities benefits. It would provide mixed-use opportunities that are bike and pedestrian friendly and provide opportunities for live/work, artist spaces, and small-scale manufacturing.

2020 RTP/SCS Consistency Alternative

Due to the substantial reduction in housing opportunities Citywide, this alternative is the least effective in achieving the project objectives of the GPU. By setting a development cap to limit housing and non-residential development to the projections for the City as reflected in the 2020 RTP/SCS, this alternative reduces housing units by 31,515 relative to the GPU. It reduces housing development potential within the focus areas by 73 percent in comparison to the GPU, and reduces overall City future development by 27 percent. To achieve this reduction, the development cap would not only limit focus area development, but would restrict the entitled housing within Specific Plans/Special Zoning areas (reducing total housing within these areas by almost 14,000 units). This alternative clearly would not optimize high density housing that maximizes mass transit use (objective No. 2); or provide urban level intensities at the urban edges (objective No. 3). Moreover it wouldn't facilitate intensities that attract economic activities, particularly since it would not allow the maximum entitlement of approved Specific Plans and Special Zoning areas. It would achieve the remainder of the objectives, but to a lesser extent than the GPU. It would protect established neighborhoods, but not promoted infill development as much as the GPU or other alternatives (objective No. 1). It would provide only limited opportunities for live/work and artist spaces and small-scale manufacturing (objective No. 7).

7.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires a lead agency to identify the "environmentally superior alternative" and, in cases where the "No Project" Alternative is environmentally superior to the GPU, the environmentally superior development alternative must be identified. One alternative has been identified as "environmentally superior" to the GPU:

- The RTP/SCS is concluded to be the environmentally superior alternative. As summarized in Section 7.3.3, the No Project alternative is not environmentally superior to the proposed GPU. Both the Reduced Density and RTP/SCS alternatives reduce environmental impacts in comparison to the GPU, but the RTP/SCS reduces more impacts, and also eliminates a significant, unavoidable impact of the GPU. This alternative was designed with the objective of eliminating the significant population impact of the GPU. This alternative also reflects the alternative that reduces potential future development more than any of the other alternatives.

8. Impacts Found Not to Be Significant

California Public Resources Code Section 21003 (f) states: "…it is the policy of the state that…[a]ll persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available financial, governmental, physical, and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment." This policy is reflected in the State California Environmental Quality Act (CEQA) Guidelines (Guidelines) Section 15126.2(a), which states that "[a]n EIR [environmental impact report] shall identify and focus on the significant environmental impacts of the proposed project" and Section 15143, which states that "[t]he EIR shall focus on the significant effects on the environment."

This chapter includes an environmental analysis and finding of no impact or less than significant impact for the topics precluded from detailed discussion in Chapter 5, *Environmental Analysis*, of this Draft Program EIR (PEIR). Guidelines Section 15128 requires a statement briefly indicating the reasons that various possible significant effects of the General Plan Update (GPU) were determined not to be significant and were therefore not discussed in detail in this PEIR.

8.1 AGRICULTURE AND FORESTRY RESOURCES

Would development in the plan area:

Impact 8-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency to non-agricultural use.

No Impact. The proposed GPU would allow for the development of a mix of uses in highly urbanized areas of the city. Furthermore, the entire City of Santa Ana is nearly built out. According to the California Resource Agency's Department of Conservation (DOC 2016), the city does not have any significant agricultural resources (see Figure 8-1, *City of Santa Ana Agricultural Resources*). Therefore, no impacts to farmland would occur under the proposed project, and no further analysis is required in the PEIR.

Impact 8-2: Conflict with existing zoning for agricultural use, or a Williamson Act contract.

No Impact. Santa Ana has no land designated or zoned for agricultural use (Santa Ana 2019). Furthermore, Santa Ana does not have any land subject to a Williamson Act contract (DOC 2004). Thus, no impacts to agricultural zoning or a Williamson Act contract would occur, and no further analysis is required in the PEIR.

Impact 8-3: Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).

No Impact. Santa Ana does not have any land designated or zoned for forestland, timberland, or timberland zoned Timberland Production (Santa Ana 2019). Thus, the proposed project would have no impacts on forest land in the city and no further analysis is required in the PEIR.

Impact 8-4: Result in the loss of forest land or conversion of forest land to non-forest use.

No Impact. See Impact 8-3, above.

Impact 8-5: Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use.

No Impact. See Impacts 8-1, 8-2, and 8-3, above.

8.2 WILDFIRE

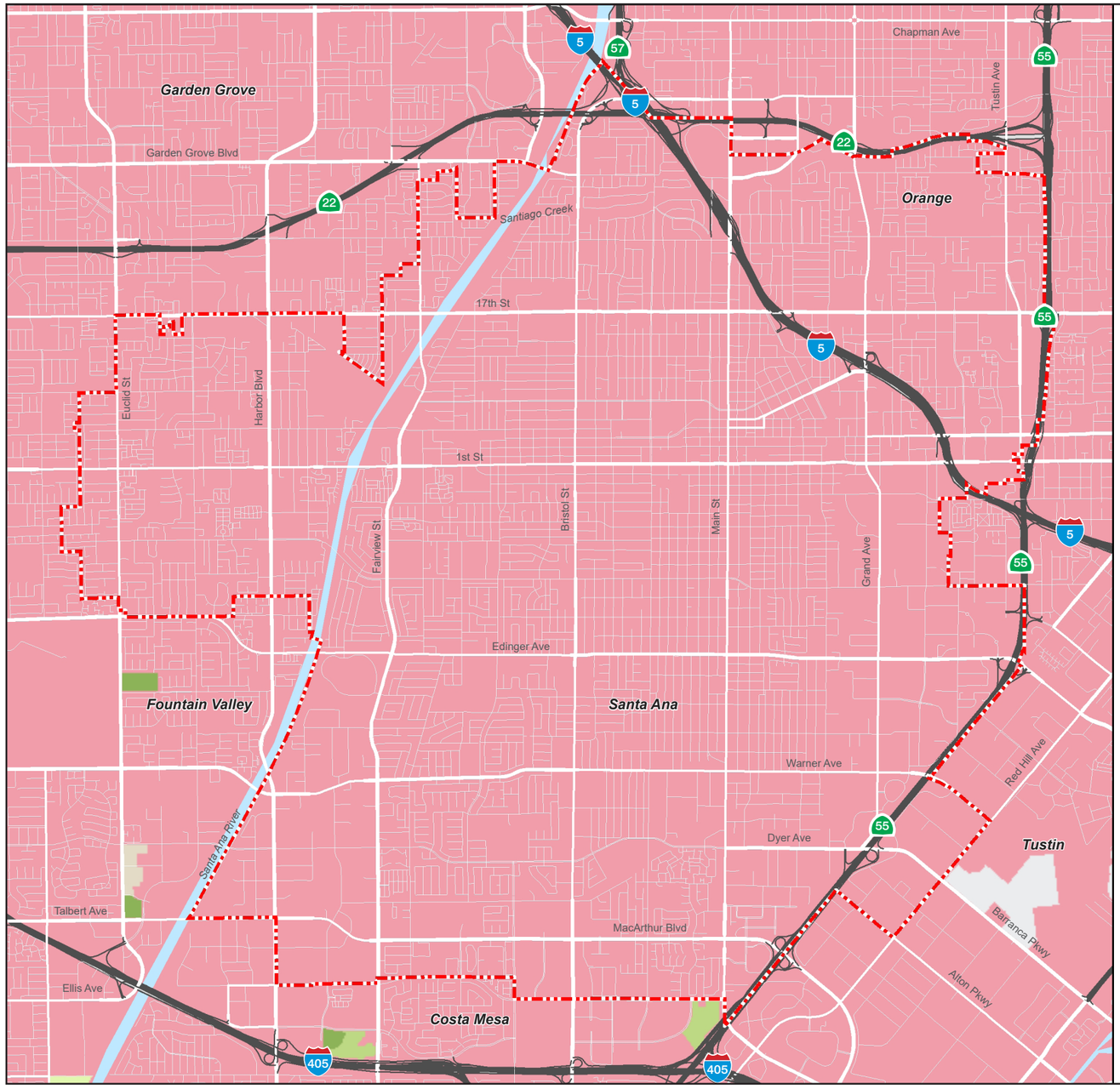
According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if located in or near state responsibility areas or lands classified as very high fire hazard severity zones.

Wildland fire protection in California is the responsibility of either the State, local government, or the federal government. State responsibility areas (SRA) are the areas where the State of California has the primary financial responsibility for the prevention and suppression of wildland fires. The SRA forms one large area over 31 million acres, for which the State Department of Forestry and Fire Protection (CAL FIRE) provides a basic level of wildland fire prevention and protection services.

Local responsibility areas (LRA) include incorporated cities, cultivated agriculture lands, and portions of the desert. LRA fire protection is typically provided by city fire departments, fire protection districts, counties, and by CAL FIRE under contract to local government (CAL FIRE 2012). CAL FIRE uses an extension of the state responsibility area fire hazard severity zone model as the basis for evaluating fire hazard in local responsibility areas. The local responsibility area hazard rating reflects flame and ember intrusion from adjacent wildlands and from flammable vegetation in the urban area.

CAL FIRE is mandated by California Public Resources Code Sections 4201 to 4204 and California Government Code Sections 51175 to 51189 to identify fire hazard severity zones (FHSZ) for all communities in California. These are areas of significant fire hazard based on fuels, terrain, weather, and other relevant factors. In SRAs, CAL FIRE has mapped three hazard ranges—moderate, high, and very high. In a local responsibility area, the law only requires identification of very high FHSZs. Local governments accept CAL FIRE's determination or make other, local determinations.

Figure 8-1 - Santa Ana Agricultural Resources



City of Santa Ana
Prime Farmland
Farmland of Statewide Importance
Grazing Land
Other Land
Urban and Built-Up Land

0 1
Scale (Miles)

Source: California Department of Conservation, 2016

8. Impacts Found Not to Be Significant

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The wildland-urban interface (WUI) is the area within or adjacent to an "at-risk community" that is identified in recommendations to the Secretary of Agriculture in a Community Wildfire Protection Plan or is any area for which a Community Wildfire Protection Plan is not in effect but is within 0.5 mile of the boundary of an "at risk community." An "at risk community" is defined as:

- An interface community as defined in the notice "Wildland Urban Interface Communities Within the Vicinity of Federal Lands That Are at High Risk from Wildfire," issued by the Secretary of Agriculture and the Secretary of the Interior

- Or a group of homes and other structures with basic infrastructure and services (such as utilities and collectively maintained transportation routes) within or adjacent to federal land and in which conditions are conducive to a large-scale wildland fire which could pose a significant threat to human life or property (DOA 2019).

A WUI is also any area that is within 1.5 miles of an "at risk community" and has sustained steep slopes that may affect wildfire behavior, has a geographic feature that aids in creating an effective fuel break, or is in fuel condition class 3.[1] An area adjacent to evacuation routes for an "at risk community" is another example of a WUI.

The nearest FHSZ in an SRA to the City of Santa Ana is a high FHSZ about 4.0 miles east along the western edge of Loma Ridge. The nearest FHSZ in an LRA is about 3.8 miles at the southern tip of the Peters Canyon Regional Park (CAL FIRE 2011, 2007). Therefore, the city is not in or near SRAs or lands classified as very high FHSZs. Additionally, no area in the city is a WUI (UWM 2010). Therefore, no impacts would occur. The remaining wildfire questions in Appendix G are not relevant to the GPU.

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[1] An area classified as fuel condition class 3 implies that the current condition of the vegetation within the area would not be sustainable due to the absence of two or more natural fire cycles. In other words, an excess of vegetation and fuels has occurred due to the exclusion of fire which naturally reduces the level of forest fuels.

8. Impacts Found Not to Be Significant

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9. Growth-Inducing Impacts of the Proposed Project

Pursuant to Sections 15126(d) and 15126.2(d) of the CEQA Guidelines, this section is provided to examine ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Also required is an assessment of other projects that would foster other activities which could affect the environment, individually or cumulatively. To address this issue, potential growth-inducing effects will be examined through analysis of the following questions:

- Would this project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?
- Would this project result in the need to expand one or more public services to maintain desired levels of service?
- Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?
- Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

Please note that growth-inducing effects are not to be construed as necessarily beneficial, detrimental, or of little significance to the environment. This issue is presented to provide additional information on ways in which this project could contribute to significant changes in the environment, beyond the direct consequences of developing the land use concept examined in the preceding sections of this PEIR.

Would this project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?

Construction or Extension of Major Infrastructure

- Implementation of the GPU would allow for infill development within the focus areas and alteration, of existing land uses. This would indirectly induce construction of infrastructure extensions and improvements, such as roadways, storm drains, water pipes, solid waste collection systems, and energy/communication extensions. In addition, the proposed Project would increase demand for electricity and natural gas that could require expansion of energy infrastructure. As infrastructure is extended,

obstacles to growth would be removed. Impacts to existing utilities and service systems and potential needs for future improvements are discussed further in Section 5.18, *Utilities and Service Systems*.

- Buildout of roadways in the City per roadway classifications in the proposed GPU Circulation Element would increase roadway capacity in some areas to maintain adequate levels of service and would also improve roadways with multimodal amenities and features to promote pedestrian, bicycle, and transit use. This would allow for more efficient multimodal transportation network throughout the City and would promote the development of land near these enhanced roadways. Proposed roadway classifications and their impacts are described in Section 5.16, *Transportation and Traffic*.

Changes in Existing Regulations

As an amendment to the current General Plan land use element, the GPU consists of new and/or modified land use goals and policies and a number of changes to the city's land use designations and development capacities in focus area, as described in Chapter 3, *Project Description*. Buildout of the GPU compared to the current General Plan would result in an additional 13,195 dwelling units and a reduction of 2,665,857 square feet of nonresidential uses. Additional buildout statistics by focus area are detailed in Table 3-6, *Proposed Land Use Designations and Statistics*, in Chapter 3, *Project Description*.

Would this project result in the need to expand one or more public services to maintain desired levels of service?

As described in Chapter 5.14, *Public Services*, and Chapter 5.15, *Recreation,* public service agencies were consulted during preparation of this PEIR—Orange County Fire Authority, Santa Ana Police Department, Santa Ana Unified School District, Tustin Unified School District, Garden Grove Unified School District, Orange Unified School District, the City of Santa Ana Library, and the City of Santa Ana Recreation Department. None of the service providers indicated that buildout of the GPU would necessitate the immediate expansion of their services and facilities in order to maintain desired levels of service, with the exception of the City's Recreation Department, which noted a current deficiency in existing parkland and facilities that may be intensified by the project's buildout. Therefore, as Santa Ana continues to grow, further commitment of public services in the form of park services will be required to maintain a desired level of service.

Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?

Implementation of the GPU would encourage or facilitate economic effects. A number of temporary jobs would be created during project development (e.g., design, planning, engineering, construction, etc.), which would be a direct, growth-inducing effect of the GPU.

As the population grows and occupies new dwelling units in accordance with the GPU, new residents would seek shopping, entertainment, employment, home improvement, auto maintenance, and other economic opportunities in the surrounding area. This would facilitate economic goods and services and could, therefore, encourage the creation of new businesses and/or the expansion of existing businesses to address these economic needs. Furthermore, the proposed increases in development capacity for office, commercial, and

retail uses allowed under the GPU would serve the shopping needs of the future residents and would generate additional employment opportunities. Therefore, the GPU would encourage or facilitate economic effects.

Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

As discussed in Section 3, *Project Description*, the GPU is an update to the current General Plan. The GPU refines and adds to the goals and policies, and changes land uses in the focus areas. New and/or modified goals and policies in the GPU either replace, supplement, or elaborate on those in the existing General Plan, and development capacities for the subareas are adjusted to reflect existing market conditions and anticipated economic growth. The most substantial changes are capacity increases for residential uses in the 55 Freeway/Dyer Road and South Bristol Street focus areas. However, specific development projects are not proposed as part of the General Plan Update.

As analyzed in Chapter 5.10, *Land Use and Planning*, the GPU is consistent with relevant goals and policies in the existing General Plan and helps to carry out the overall vision of the City's General Plan. Thus, the GPU would not set a precedent that could encourage and facilitate other activities that could significantly affect the environment. Subsequent development projects in accordance with the GPU would require environmental analysis and associated mitigation to ensure that any subsequent impacts would not adversely affect the environment.

Moreover, no changes to any of the City's building safety standards (building, grading, plumbing, mechanical, electrical, fire codes) are proposed or required to implement the GPU. Therefore, the GPU would not involve a precedent-setting action that would encourage and/or facilitate other activities that could significantly affect the environment.

9. Growth-Inducing Impacts of the Proposed Project

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