

Fontana Forward
FONTANA GENERAL PLAN UPDATE 2015-2035

Fontana Forward

General Plan Update 2015-2035

Draft Environmental Impact Report

CITY OF FONTANA, CALIFORNIA | JUNE 8, 2018

STATE CLEARINGHOUSE #2016021099

Table of Contents

1.0 INTRODUCTION 1-1
1.1 ENVIRONMENTAL IMPACT REPORT PURPOSE AND INTENDED USES 1-1
1.2 PUBLIC PARTICIPATION PROGRAM 1-2
1.2.1 Public and Stakeholder Meetings 1-2
1.3 SCOPE AND CONTENTS 1-3
1.4 REVIEW PROCESS AND AVAILABILITY OF THE DRAFT EIR 1-4
1.5 ORGANIZATION OF THE EIR 1-4

2.0 SUMMARY 2-1
2.1 OVERVIEW OF PROJECT 2-1
2.2 HISTORY 2-2
2.3 PURPOSE AND NEED 2-3
2.4 GENERAL PLAN UPDATE SHORT AND MEDIUM-TERM POLICIES, GOALS, AND ACTIONS 2-3
2.5 PROJECT OBJECTIVES 2-4
2.6 SUMMARY OF ALTERNATIVES 2-5
2.7 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED 2-6
2.8 SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES 2-6

3.0 PROJECT DESCRIPTION 3-1
3.1 BACKGROUND 3-1
3.2 PROJECT LOCATION 3-2
3.3 EXISTING GENERAL PLAN 3-2
3.4 FONTANA FORWARD GENERAL PLAN UPDATE 3-6
3.5 UPDATED CHAPTERS/ "ELEMENTS" 3-6
3.5.1 Chapter 4: Community and Neighborhoods 3-7
3.5.2 Chapter 5: Housing 3-7
3.5.3 Chapter 6: Health and Wellness 3-7
3.5.4 Chapter 7: Conservation, Open Space, Parks and Trails 3-8
3.5.5 Chapter 8: Public and Community Services Department 3-8
3.5.6 Chapter 9: Community Mobility and Circulation 3-8
3.5.7 Chapter 10: Infrastructure and Green Systems 3-8
3.5.8 Chapter 11: Noise and Safety Element 3-9
3.5.9 Chapter 12: Sustainability and Resilience 3-9
3.5.10 Chapter 13: Economy, Education, and Workforce Development 3-9
3.5.11 Chapter 14: Downtown Area Plan 3-9
3.5.12 Chapter 15: Land Use, Zoning, and Urban Design 3-9
3.5.13 Chapter 16: Stewardship and Implementation 3-10
3.6 LAND USE ACREAGE COMPARISON 3-10

4.0 ENVIRONMENTAL SETTING 4-1
4.1 REGIONAL SETTING 4-1
4.2 PHYSICAL SETTING 4-1
4.3 DEMOGRAPHICS 4-1

5.0 ENVIRONMENTAL IMPACT ANALYSIS 5-1
5.1 AESTHETICS 5.1-1
5.1.1 Environmental Setting 5.1-1
5.1.2 Thresholds of Significance 5.1-6
5.1.3 Environmental Impacts 5.1-6
5.1.4 Mitigation Measures 5.1-16
5.1.5 References 5.1-17
5.2 AIR QUALITY 5.2-1
5.2.1 Environmental Setting 5.2-1
5.2.2 Planning and Regulatory Framework 5.2-14
5.2.3 Thresholds of Significance 5.2-18
5.2.4 Environmental Impacts 5.2-19
5.2.5 Mitigation Measures 5.2-31
5.2.6 References 5.2-36
5.3 BIOLOGICAL RESOURCES 5.3-1
5.3.1 Environmental Setting 5.3-1
5.3.2 Existing Conditions 5.3-1
5.3.3 Special Status Wildlife, Plants, and Habitat 5.3-7
5.3.4 Wildlife Movement and Migratory Routes 5.3-36
5.3.5 Wetlands and Riparian Habitat 5.3-37
5.3.6 Planning and Regulatory Framework 5.3-37
5.3.7 Thresholds of Significance 5.3-44
5.3.8 Environmental Impacts 5.3-45
5.3.9 Mitigation Measures 5.3-50
5.3.10 References 5.3-52
5.4 CULTURAL RESOURCES 5.4-1
5.4.1 Environmental Setting 5.4-1
5.4.2 Tribal Cultural Resources 5.4-9
5.4.3 Thresholds of Significance 5.4-13
5.4.4 Environmental Impacts 5.4-14
5.4.5 Mitigation Measures 5.4-17
5.4.6 References 5.4-19
5.5 GEOLOGY, SOILS, AND SEISMICITY 5.5-1
5.5.1 Regional Geology 5.5-1
5.5.2 Seismic Setting 5.5-2
5.5.3 Soils 5.5-4
5.5.4 Thresholds of Significance 5.5-7
5.5.5 Environmental Impacts 5.5-7
5.5.6 Mitigation Measures 5.5-11
5.5.7 References 5.5-11

5.6 GREENHOUSE GAS EMISSIONS 5.6-1
5.6.1 Environmental Setting 5.6-1
5.6.2 Thresholds of Significance 5.6-12
5.6.3 Environmental Impacts 5.6-13
5.6.4 Mitigation Measures 5.6-23
5.6.5 References 5.6-25
5.7 HAZARDS AND HAZARDOUS MATERIALS 5.7-1
5.7.1 Environmental Setting 5.7-1
5.7.2 Thresholds of Significance 5.7-4
5.7.3 Environmental Impacts 5.7-5
5.7.4 Mitigation Measures 5.7-13
5.7.5 References 5.7-14
5.8 HYDROLOGY AND WATER QUALITY 5.8-1
5.8.1 Regional Hydrology 5.8-1
5.8.2 Regulatory Framework 5.8-3
5.8.3 Thresholds of Significance 5.8-7
5.8.4 Environmental Impacts 5.8-8
5.8.5 Mitigation Measures 5.8-12
5.8.6 References 5.8-12
5.9 LAND USE 5.9-1
5.9.1 Existing Conditions 5.9-1
5.9.2 Thresholds of Significance 5.9-9
5.9.3 Environmental Impacts 5.9-9
5.9.4 Mitigation Measures 5.9-12
5.9.5 References 5.9-12
5.10 NOISE 5.10-1
5.10.1 Environmental Setting 5.10-1
5.10.2 Thresholds of Significance 5.10-2
5.10.3 Environmental Impacts 5.10-4
5.10.4 Mitigation Measures 5.10-9
5.10.5 References 5.10-10
5.11 POPULATION & HOUSING 5.11-1
5.11.1 Existing Conditions 5.11-1
5.11.2 Project Impacts 5.11-2
5.11.3 References 5.11-7
5.12 PUBLIC SERVICES, UTILITIES, & RECREATION 5.12-1
5.12.1 Police 5.12-1
5.12.2 Fire 5.12-4
5.12.3 Water 5.12-8
5.12.4 Wastewater 5.12-17
5.12.5 Solid Waste 5.12-20
5.12.6 Stormwater 5.12-23
5.12.7 Schools 5.12-27
5.12.8 Parks & Recreation 5.12-30
5.12.9 References 5.12-38

5.13 TRANSPORTATION 5.13-1
5.13.1 Environmental Setting 5.13-1
5.13.2 Regulatory Framework 5.13-12
5.13.3 Thresholds of Significance 5.13-15
5.13.4 Environmental Impacts 5.13-15
5.13.5 Mitigation Measures 5.13-38
5.13.6 References 5.13-40

6.0 ALTERNATIVES 6-1
6.1 INTRODUCTION 6-1
6.2 NO PROJECT ALTERNATIVE 6-2
6.2.1 Description 6-2
6.2.2 Impact Evaluation 6-3
6.2.3 Conclusion 6-3
6.3 COMPACT SCENARIO ALTERNATIVE 6-3
6.3.1 Description 6-3
6.3.2 Impact Evaluation 6-4
6.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE 6-10

7.0 OTHER CEQA CONSIDERATIONS 7-1
7.1 CUMULATIVE IMPACT ASSESSMENT 7-1
7.1.1 Aesthetics 7-1
7.1.2 Air Quality 7-2
7.1.3 Biological Resources 7-2
7.1.4 Cultural Resources 7-3
7.1.5 Geology, Soils, and Seismicity 7-3
7.1.6 Greenhouse Gas Emissions 7-3
7.1.7 Hazards and Hazardous Materials 7-4
7.1.8 Hydrology and Water Quality 7-5
7.1.9 Land Use 7-6
7.1.10 Noise 7-6
7.1.11 Population and Housing 7-6
7.1.12 Public Services, Utilities, and Recreation 7-6
7.1.13 Transportation 7-7
7.2 GROWTH-INDUCING IMPACTS 7-8
7.3 SIGNIFICANT IRREVERSIBLE CHANGES 7-9
7.4 SIGNIFICANT UNAVOIDABLE IMPACTS 7-9
7.5 EFFECTS NOT FOUND TO BE SIGNIFICANT 7-10
7.5.1 Agricultural and Forestry Resources 7-10
7.5.2 Mineral Resources 7-10
7.6 ENERGY CONSERVATION 7-10
7.6.1 Gridscape Solutions Grants 7-11

8.0 PREPARERS 8-1

LIST OF TABLES

Table 2.6-1 Summary of the Characteristics of the Proposed Project and Land Use/Transportation Alternatives Evaluated in the EIR 2-5
Table 2.8-1 Summary of Significant Project Impacts 2-7
Table 3.5-1 Key Components of the 2003 General Plan Versus the 2018 General Plan Update 3-7
Table 3.6-1 Difference in Acreages of the 2003 General Plan and the 2018 General Plan Update 3-10
Table 5.1-1 General Plan Update Goals, Policies, and Actions Applicable to Neighborhood Preservation and Connections 5.1-7
Table 5.1-2 General Plan Update Goals, Policies, and Actions Applicable to Trees 5.1-8
Table 5.1-3 General Plan Update Goals, Policies, and Actions Applicable to Historic Resources 5.1-9
Table 5.1-4 General Plan Update Goals, Policies, and Actions Applicable to Visual Character 5.1-12
Table 5.2-1 Ambient Air Quality Standards 5.2-6
Table 5.2-2 South Coast Air Basin Attainment Status 5.2-10
Table 5.2-3 2014-2016 Local Air Quality 5.2-11
Table 5.2-4 2012-2014 Air Quality Standards Exceedance 5.2-12
Table 5.2-5 SCAQMD Maximum Daily Emissions Thresholds (lbs/days) 5.2-19
Table 5.2-6 General Plan Buildout 2040 Conditions Summary 5.2-20
Table 5.2-7 Land Use Comparison Between 2003 General Plan and Proposed General Plan Update 5.2-22
Table 5.2-8 Long-Term Criteria Air Pollutant Emissions by Land Use 5.2-23
Table 5.2-9 Difference in Long-Term Criteria Air Pollutant Emissions from Proposed General Plan Update Compared to 2003 General Plan .. 5.2-24
Table 5.2-10 Total Difference in Long-Term Criteria Air Pollutant Emissions from Proposed General Plan Update Compared to 2003 General Plan .. 5.2-25
Table 5.2-11 General Plan Update Applicable Goals and Policies 5.2-26
Table 5.3-1 Potentially Occurring Sensitive Plant Species* 5.3-9
Table 5.3-2 Potentially Occurring Sensitive Wildlife Species* 5.3-19
Table 5.3-3 Applicable Goals, Policies, and Actions 5.3-45
Table 5.3-4 Construction and Operational Impacts to Plants and Wildlife 5.3-46
Table 5.4-1 Marker Traits of Patterns and Phases within Encinitas Tradition for the City of Fontana* 5.4-4
Table 5.4-2 Tribal Outreach under SB 18 and AB 52 ..... 5.4-11
Table 5.4-3 General Plan Update Goals, Policies, and Actions Applicable to Cultural Resources 5.4-15
Table 5.5-1 MMI Scale 5.5-2

Table 5.5-2 Major Fault Zones near Fontana 5.5-3
Table 5.5-3 Applicable Goals, Policies, and Actions.....5.5-9
Table 5.6-1 Global Warming Potential (GWP) of Greenhouse Gases (GHG).....5.6-4
Table 5.6-2 General Plan Buildout 2040 Conditions Summary..... 5.6-15
Table 5.6-3 Land Use Comparison Between 2003 General Plan and Proposed General Plan Update..... 5.6-15
Table 5.6-4 Estimated Land Use-Specific Greenhouse Gas Emissions Factors 5.6-16
Table 5.6-5 Difference in Long-Term Greenhouse Gas Emissions from Proposed General Plan Update Compared to 2003 General Plan .. 5.6-17
Table 5.6-6 Total Difference in Long-Term Greenhouse Gas Emissions from Proposed General Plan Update Compared to 2003 General Plan .. 5.6-18
Table 5.6-7 General Plan Update Applicable Goals and Policies..... 5.6-19
Table 5.7-1 General Plan Update Goals, Policies, and Actions Applicable to Industrial Land Uses 5.7-6
Table 5.7-2 General Plan Update Goals, Policies, and Actions Applicable to Hazardous Materials Use, Storage, and/or Transport 5.7-7
Table 5.7-3 General Plan Update Goals, Policies, and Actions Applicable to Noise 5.7-9
Table 5.7-4 General Plan Update Goals, Policies, and Actions Applicable to Urban Fire Protection..... 5.7-12
Table 5.8-1 Applicable Goals, Policies, and Actions.....5.8-9
Table 5.9-1 Difference in Acreages of the 2003 General Plan and the 2018 General Plan Update.....5.9-7
Table 5.9-2 City and County Land Use Designation Comparison 5.9-8
Table 5.9-3 General Plan Update Goals and Policies..... 5.9-10
Table 5.9-4 General Plan Update Goals and Policies..... 5.9-12
Table 5.10-1 General Plan Update Goals, Policies, and Actions that Pertain to Protecting New Development from Noise Impacts 5.10-5
Table 5.11-1 Goals and Policies Related to Population and Housing..... 5.11-3
Table 5.12-1 2015-2035 General Plan Public Safety Goals, Policies and Actions... 5.12-2
Table 5.12-2 2015-2035 General Plan Fire Protection Goals, Policies and Actions 5.12-5
Table 5.12-3 Fontana Water Company Retail Demands for Potable and Raw Water 5.12-9
Table 5.12-4 One Water One Watershed Plan..... 5.12-11
Table 5.12-5 Water Goals, Policies and Actions..... 5.12-12
Table 5.12-6 FWC UWMP Projected Water Use by Use Type: 2020-2040..... 5.12-15
Table 5.12-7 FWC UWMP Projected Water Supply 2020-2040..... 5.12-16
Table 5.12-8 Wastewater Generation Factors..... 5.12-17
Table 5.12-9 Wastewater Goals, Policies, and Actions..... 5.12-18
Table 5.12-10 Solid Waste Goals Policies and Actions..... 5.12-22

Table 5.12-11 Stormwater Goals, Policies and Actions 5.12-25
Table 5.12-12 Economy, Education, and Workforce Development 5.12-28
Table 5.12-13 Development Impact Fees 5.12-30
Table 5.12-14 Protected Open Space in Fontana 5.12-31
Table 5.12-15 2015-2035 General Plan Parks and Recreation Goals, Policies and Actions 5.12-36
Table 5.13-1 Arterial Roadway Hierarchies and Capacities 5.13-4
Table 5.13-2 Automobile LOS Descriptions 5.13-7
Table 5.13-3 General Plan Update Goals, Policies, and Actions Community Mobility and Circulation Element 5.13-17
Table 5.13-4 2040 Growth Estimates 5.13-27
Table 5.13-5 Roadway Locations Exceeding LOS "C" 5.13-31
Table 5.13-6 VMT Summary 5.13-34
Table 6.2-1 No Project Alternative Comparison with General Plan Update 6-2
Table 6.3-1 Compact Scenario Alternative Comparison with General Plan Update 6-4
Table 8.0-1 List of Preparers 8-1

LIST OF FIGURES

Figure 3.3-1 Regional Vicinity Map 3-3
Figure 3.3-2 Project Vicinity Map 3-4
Figure 3.3-3 Aerial Photograph of the City of Fontana and Surrounding Area 3-5
Figure 5.1-1 View of the San Gabriel Mountains 5.1-2
Figure 5.1-2 South Fontana Homes Built in the 1980s 5.1-3
Figure 5.1-3 Falcon Ridge Town Center, Fontana 5.1-4
Figure 5.1-4 Modern Warehouses near the Target Distribution Center, Fontana 5.1-4
Figure 5.1-5 Village Park, Fontana 5.1-5
Figure 5.8-1 Santa Ana River Watershed 5.8-2
Figure 5.9-1 Existing Land Use 5.9-2
Figure 5.9-2 Proposed Land Use 5.9-3
Figure 5.9-3 Proposed Land Use Changes 5.9-4
Figure 5.10-1 Forecast Conditions (2020) Noise Exposure Map 5.10-3
Figure 5.13-1 Existing Transportation Network 5.13-2
Figure 5.13-2 Hierarchy of Streets Plan 5.13-5
Figure 5.13-3 Existing (2017) ADT Volumes 5.13-8
Figure 5.13-4 Current General Plan 2040 ADT Volumes 5.13-29
Figure 5.13-5 General Plan Update 2040 ADT Volumes 5.13-30

LIST OF APPENDICES

APPENDIX A NOTICE OF PREPARATION

APPENDIX B BACKGROUND REPORT

APPENDIX C AIR QUALITY MODEL OUTPUT

APPENDIX D HABITAT ASSESSMENT

APPENDIX E NAHC CORRESPONDENCE

APPENDIX F LOCAL HAZARD MITIGATION PLAN

APPENDIX G LAND USE / TRANSPORTATION ALTERNATIVES

Abbreviations

°F	Degrees Fahrenheit
AAM	annual arithmetic mean
AAQS	ambient air quality standards
AB	Assembly Bill
AB32	California Air Resources Board Scoping Plan
ADA	*Americans with Disabilities Act*
ADT	average daily traffic
AF	Acre Feet
AFY	acre-feet per year
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
APE	Area of Potential Effect
APG	California Adaptation Planning Guide
ARB	Air Resources Board
ATP	Active Transportation Plan
BACM	Best Available Control Measures
BACT	Best Available Control Technology
bgs	below ground surface
BMP	best management practice
BO	Biological Opinion
BP	Before Present
CAA	*Clean Air Act*
CAAQS	California Ambient Air Quality Standards

CAFE	corporate average fuel economy
CAGN	Coastal California gnatcatcher
CalEEMod	California Emissions Estimator Model 2016.3.1
CalEPA	California Environmental Protection Agency
CALGreen	California Green Building Standards Code
CARB	California Air Resources Board
CAT	California Climate Action Team
CBC	California Building Code
CCAA	*California Clean Air Act*
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	*California Environmental Quality Act*
CFC	chlorofluorocarbon
CFR	Code of Federal Regulations
CGS	California Geologic Survey
CH_4	Methane
CIP	capital improvement program
City	City of Fontana
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO_2	Carbon Dioxide
CPTED	Crime Prevention Through Environmental Design

CRPR	California Rare Plant Rank
CVWD	Cucamonga County Water District
CWA	*Clean Water Act*
dB	decibel
dBA	A-weighted decibel
DIF	Development Impact Fee
DSF	Delhi Sands Flower-Loving Fly
DTSC	Department of Toxic Substances Control
du/ac	Dwelling Units Per Acre
EDR	Environmental Data Resources
EIR	Environmental Impact Report
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
ESA	*Endangered Species Act*
FAR	Floor Area Ratio
FEMA	Federal Emergency Management Agency
FFPD	Fontana Fire Protection District
FHSZ	Fire Hazard Severity Zone
FIRM	Flood Insurance Rate Map
FPD	Fontana Police Department
FRM	Federal Reference Method
FUSD	Fontana Unified School District
FWC	Fontana Water Company
GARB	California Air Resources Board
GHG	Greenhouse Gas

GP	General Plan
GPAC	General Plan Advisory Committee
gpd	gallons per day
GWP	global warming potential
H_2S	hydrogen sulfide
HARP	Hotspots Analysis and Reporting Program
HCD	Housing and Community Development
HCFC	hydrochlorofuorocarbon
HCP	Habitat Conservation Program
HD	heavy-duty
HFC	hydrofluorocarbons
HMP	Hazard Mitigation Plan
HVIP	Heavy Duty Voucher Incentive Program
HVLP	high volume, low pressure
IEUA	Inland Empire Utility Agency
IPCC	Intergovernmental Panel on Climate Change
IRWM	integrated regional water management
LAFCO	Local Agency Formation Commission
LCFS	low carbon fuel standard
LED	light emitting diode
LHMP	Local Hazard Mitigation Plan
LOS	Level of Service
LSAA	Lake or Streambed Alteration Agreement
MBTA	*Migratory Bird Treaty Act*
MCL	Maximum Contaminant Level

MD	medium-duty
MEP	Maximum Extent Practicable
MM 5.14-1	Mitigation Measure 5.14-1
MMI	Modified Mercalli Intensity
MPO	metropolitan planning organization
MS4	Municipal Separate Storm Sewer System
MSHCP	Multiple Species Habitat Conservation Plan
msl	Above Mean Sea Level
MSMP	Municipal Stormwater Management Plan
MTCO2E	metric tons carbon dioxide equivalent
M_W	Moment Magnitude
MWD	Metropolitan Water District
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NCHRP	National Cooperative Highway Research Program
NEV	Neighborhood Electric Vehicle
NFIP	National Flood Insurance Program
NOP	Notice of Preparation
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NPPA	*Native Plant Protection Act*
OCWD	Orange County Water District
OEHHA	Office of Environmental Health Hazard Assessment

OES	Office of Emergency Services
OPR	Office of Planning and Research
OWOW	One Water One Watershed
Pb	lead
PFC	perfluorocarbon
$PM_{2.5}$	2.5 microns or less
PM_{10}	10 microns or less
ppb	parts per billion
PUD	Planned Unit Development
RAFSS	Riversidean Alluvial Fan Sage Scrub
ROG	reactive organic gases
RP	Regional Plants
RSS	Riversidean Sage Scrub
RTP	Regional Transportation Plan
RTP-SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board
SAR	Santa Ana River
SARWQCB	Santa Ana Regional Water Quality Control Board
SAWPA	Santa Ana Watershed Project Authority
SB	Senate Bill
SBCFCD	San Bernardino County Flood Control District
SBCTA	San Bernardino County Transportation Authority
SBKR	San Bernardino kangaroo rat
SBTAM	San Bernardino Transportation Analysis Model
SCAG	Southern California Association of Governments

SCAQMD	Southern California Air Quality Management District
SCRRA	Southern California Regional Rail Authority
SCS	Sustainable Communities Strategy
SDWA	*Safe Drinking Water Act*
SF_6	sulfur hexafluoride
SO_2	sulfur dioxide
SO_X	oxides of sulfur
SOI	Sphere of Influence
SOON	Surplus Off-Road Opt-In for NOx
Stantec	Stantec Consulting Inc.
STIP	Statewide Transportation Improvement Program
SWIP	Southwest Industrial Park
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TAZ	Traffic Analysis Zone
TCR	Tribal Cultural Resources
TDM	Transportation Demand Management
THPO	Tribal Historic Preservation Office
TMDL	Total Maximum Daily Load
tpd	tons per day
TRU	Transport Refrigeration Unit
U.S.	United States
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey

UWMP	Urban Water Management Plan
V/C	Volume to Capacity
V5	Version 5
Valley District	San Bernardino Valley Municipal Water District
VMT	vehicle miles traveled
VOC	volatile organic compound
VVTA	Victor Valley Transit Authority
WDR	Waste Discharge Requirement
WMXU	Walkable Mixed-Use
WMXU-1	Walkable Mixed-Use Downtown and Corridors
WMXU-2	Walkable Mixed Use Urban Village
WSBCWD	West San Bernardino County Water District
Zoning Code	Zoning and Development Code

1.0 INTRODUCTION

1.1 ENVIRONMENTAL IMPACT REPORT PURPOSE AND INTENDED USES

Whenever a community adopts or amends a general plan or a general plan element, it is subject to the *California Environmental Quality Act* (CEQA), usually requiring an environmental impact report (EIR). The Fontana General Plan Update will be accompanied by an EIR prepared concurrently with the plan. The purpose of the EIR is to identify potential significant environmental impacts of proposals, alternatives with fewer adverse impacts, and potential ways to reduce or avoid environmental damage, thereby addressing significant environmental impacts and mitigation options. The EIR evaluates the proposed plan's effect on the physical environment as it is now, and the impact on the environment that would exist under the proposed plan, including secondary and cumulative effects.

Pursuant to Section 15168 of the State CEQA Guidelines, this EIR is a Program EIR. The goals, policies, land use designations, implementation programs, and other substantive components of the General Plan and implementing sections of the Zoning and Development Code comprise the "program" evaluated in this Program EIR. Subsequent activities undertaken by the City of Fontana (City) and project proponents to implement the General Plan will be examined in light of this Program EIR to determine the appropriate level of environmental review required under CEQA. Such subsequent implementation activities may include the following:

- Updating the Zoning Code
- Rezoning of properties to achieve consistency with the General Plan
- Updating and approval of Specific Plans, Area Plans, and other development plans and planning documents
- Approval of tentative maps, variances, conditional use permits, and other land use permits and entitlements
- Approval of development agreements
- Approval of facility and service master plans and financing plans
- Approval and funding of public improvement projects
- Approval of resource management plans
- Issuance of municipal bonds
- Issuance of permits and other approvals necessary for implementation of the General Plan
- Acquisition of property
- Issuance of permits and other approvals necessary for public and private development projects
- Future amendments to the City's Housing Element and other General Plan Elements

Following certification of this Program EIR and adoption of the Fontana Forward General Plan by the lead agency (City of Fontana), other agencies may use this Program EIR in the approval of subsequent implementation activities. These agencies may include but are not limited to those listed below.

State and Regional Agencies

- California Department of Fish and Wildlife
- California Department of Conservation
- California Department of Housing and Community Development (HCD)
- California Department of Transportation (Caltrans)
- Regional Water Quality Control Board
- Southern California Association of Governments
- South Coast Air Quality Management District

Federal Agencies

- U.S Fish and Wildlife Services
- U.S Army Corps of Engineers

1.2 PUBLIC PARTICIPATION PROGRAM

1.2.1 Public and Stakeholder Meetings

The General Plan update process was a collaborative effort between the City and the community and relied on the involvement of residents and business owners in order to establish a vision and blueprint for development through the General Plan horizon year of 2035. Community members were invited to participate in the planning process from the initial visioning stage through the development of the Plan policies and the drafting of the proposed General Plan. Community input activities are described below and were instrumental in the establishment of the community vision that underpins the policies of the Fontana Forward General Plan.

- Community Survey. A total of 800 randomly selected adult residents participated in the community survey between September 9, 2015 and September 21, 2015. Individuals were selected for the survey sample by randomly selecting land lines, and mobile phone numbers that service Fontana households and asking follow-up screening questions to ensure eligibility. Community members expressed their values and visions for the future, while also gauging support for various potential improvements to circulation, the Downtown area, and the city as a whole. Interviews, which averaged 19 minutes in length, were conducted in English or Spanish according to a respondent's preference. All responses were coded into a database and analyzed, and a report on findings was made available to the public by True North Research, Inc.

- General Plan Advisory Committee (GPAC). The GPAC served in an advisory role to the Planning Commission and City Council on matters related to the General Plan update process. The GPAC was created to provide input on the project throughout the process and to bring together perspectives from different disciplines and neighborhoods within the Planning Area. The committee was made up of 25 community members serving on a voluntary basis. The GPAC met regularly throughout the course of the project to help define community input into a shared vision, brainstorm issues and ideas, and review the policy content of the proposed General Plan to ensure that it met the needs and desires of the community. The public was welcomed to observe the meetings to learn more about the process.
- Stakeholder Meetings. The City conducted a series of stakeholder interviews to engage agencies and organizations with insight into the city's planning issues. These interviews were an opportunity for City staff to share information about the planning process and elicit information about programs being implemented by stakeholder groups; experiences stakeholders have had working with the City in the past; ideas for improvements to City regulations, policies, infrastructure, and services; and perspectives on key opportunities and constraints for the city over the next 20 years.

1.3 SCOPE AND CONTENTS

The approach to the analysis presented in this EIR is programmatic in nature given the broad scope of the General Plan Update. Each environmental issue is analyzed in the same manner, starting with a discussion of the existing environmental setting, including physical conditions and pertinent planning and regulatory framework. Thresholds of significance are then defined and are used to measure the proposed General Plan Updates potential impact to the environment. Thresholds of significance are based on a broad list of questions and impact topics set forth in Appendix G of the State CEQA Guidelines. The impact analysis section examines the broad, long-term environmental effects resulting from implementation of the goals and policies contained in each of the updated General Plan elements. The presence of sensitive environmental resources, hazards in specific areas, and the broad implications of the General Plan Update throughout the planning areas are considered in the determination of impact significance. If the analysis indicates that a significant impact could occur, even with the benefits of any proposed planning policies, mitigation measures are provided.

In conjunction with the Final EIR, a Mitigation Monitoring and Reporting Program (MMRP) will be prepared for adoption that identifies a responsible party, a timeline for implementation, and a monitoring frequency for any incorporated mitigation measures. The MMRP provides a mechanism for ensuring that potentially significant impacts resulting from long-term implementation of the General Plan Update is avoided or reduced to the extent feasible. For each environmental issue area examined, the discussion concludes with a statement regarding the level of impact significance remaining after imposition of any required mitigation measures.

1.4 REVIEW PROCESS AND AVAILABILITY OF THE DRAFT EIR

To define the scope of the investigation of the Program EIR, the City distributed a Notice of Preparation (NOP) (Appendix A) to city, county, and state agencies; other public agencies; and interested private organizations and individuals. The NOP review period ran from February 29, 2016 through March 30, 2016. The purpose of the NOP was to identify agency and public concerns regarding potential impacts of the proposed project, and to request suggestions concerning ways to avoid significant impacts (State CEQA Guidelines, Section 15082).

Copies of written comments received during the 30-day public review period for the NOP are included in Appendix B of this EIR. On March 10, 2016, the City also conducted a scoping meeting to solicit oral comments on the NOP. Comments were received during this meeting. Additional scoping comments were also received by other jurisdictions and agencies during the 30-day public review period.

1.5 ORGANIZATION OF THE EIR

The Draft EIR is organized as follows:

Section 1.0 Introduction

Provides a brief overview of the proposed Project.

Section 2.0 Executive Summary

A brief project description and summarizes project impacts and mitigation measures.

Section 3.0 Project Description

Provides detailed description of the proposed Project.

Section 4.0 Environmental Setting

Provides detailed description of regional and physical setting along with demographics and cumulative projects.

Section 5.0 Environmental Impact Analysis

Considers project impacts and identifies mitigation measures designed to reduce significant impacts.

Section 6.0 Alternatives

Provides an analysis of alternatives to the proposed project.

Section 7.0 Other CEQA Considerations

Provides the discussion of significant irreversible environmental changes, growth-inducing impacts, and areas of unavoidable significant environmental impacts for the proposed Project.

Section 8.0 EIR Prepares

Lists the preparers of this analysis.

2.0 SUMMARY

2.1 OVERVIEW OF PROJECT

The project analyzed in this Program Environmental Impact Report (EIR) is the adoption and long-term implementation of the Fontana Forward General Plan and subsequent amendments to Article IV (Zoning Districts) of Chapter 30 of the Fontana Municipal Code (Zoning and Development Code) adopted to implement the updated General Plan.

The Fontana Forward plan includes these elements, stand-alone or combined as required by statue (Government Code Section 65302): land use; circulation; housing; conservation and open space combined; noise and safety combined as aspects of several other elements. In addition, the plan includes optional elements on health, economic development, infrastructure, sustainability and resilience, and a Downtown Area Plan. The Fontana Forward General Plan, will continue to serve as the blueprint for the City by setting forth goals, policies, and programs that will guide the long-term physical development and quality of life in the community. The primary focus of the Fontana Forward Plan is to: 1) update the Land Use Policy Map to target revitalization efforts; 2) ensure that the Circulation Element comports with the amended land use plan and addresses all current planning laws; 3) update elements to incorporate provisions that respond to State laws adopted since 2003 (the date of adoption of the current General Plan), and 4) update other elements to reflect updated baseline conditions and to refine policies to reflect current City practices and programs. The City has established 2035 as the horizon year for the updated General Plan, meaning that 2035 represents the year by which the City would expect that the General Plan's policies and programs would be realized, and a new comprehensive review of the plan may be warranted.

All California cities are required to have a General Plan (GP) to guide the physical and economic development of the city over the next 20 years. The general plan is a strategic framework based both on the community's vision and goals and on the State's goals for the long-term development of California. Fontana's last General Plan was adopted in October 2003. This General Plan Update process will refresh the City's long-range blueprint for physical and economic development. General Plans are comprehensive and holistic community planning documents whose purpose is to guide decision making. While the focus has traditionally been on the physical development of a community, modern plans of this type recognize that physical development depends on a community's values and its goals for neighborhood life, economic development, environmental sustainability, community design, and health and wellness, among other topics. The goals for these different aspects of community life will shape the physical development of the city.

A general plan has three fundamental parts:

- A vision for the future: what is our shared vision for our community?
- A plan: what strategies do we pursue to achieve the vision?
- An implementation program: what actions do we need to undertake to implement the strategies?

2.2 HISTORY

The State requires seven "elements" or chapters in general plans: land use, circulation, housing, conservation, open space, noise, and safety. Additional elements are permitted, and elements can be combined or consolidated, as long as the mandated elements contain required content.

The 2003 Fontana Plan contains the following elements in addition to the mandated elements: community design; economic development; public facilities, services, and infrastructure; parks, recreation and trails; and air quality.

The State issued an update to its guidance document on creating general plans in 2017, which is in the public comment phase as of late 2015. Any new requirements have been incorporated into the Fontana Forward planning process.

The State of California is committed to reducing greenhouse gas emissions. The state planning framework (SB 375 and SB 226) calls for integrating land use, housing, and transportation to reduce greenhouse gases by diversifying land uses, developing multimodal transportation networks, and creating regional Sustainable Communities Strategies (SCS). Fontana is covered by an SCS created by the Southern California Association of Governments (SCAG). The Fontana GP Update demonstrates its consistency with the regional SCS. Once adopted, the new GP will provide for streamlined CEQA approvals or exemptions for projects consistent with the State's planning framework.

The vision for Fontana in the 2003 General Plan is a short statement with themes of growth, unity, quality, and connectivity: "Fontana is a modern city benefiting from rapid growth while preserving its hometown atmosphere. Our City is unified by a strong sense of community and a common goal: to be second to none in achieving high standards of quality as we grow and develop. We take great pride in our safe and attractive residential neighborhoods, which are complemented by recreational and educational facilities, and diverse and growing employment opportunities. Our Downtown and Civic Center district is the lively, thriving heart of Fontana. Our whole City is served by a network of efficient roads and infrastructure that connects us into a complete community in which we can live, learn, work and enjoy the fullness of life that Fontana has to offer."

The 2003 Vision also gives importance to a thriving downtown and additional, diverse jobs. While succinct, the Vision does not provide much guidance in terms of the character of quality growth and development, or what the "fullness of life" means in Fontana. The City was successful in implementing many important aspects of the 2003 General Plan that called for new community and transportation facilities and initiatives to reduce crime. However, the recession and market crash affected the City's ability to implement some actions.

Today, Fontana is not just competing on housing prices with coastal counties and the western Inland Empire, it is competing with neighbors such as Rancho Cucamonga and Ontario to create amenity-rich places that can attract and create a skilled workforce and 21st-century businesses to settle and grow. Both within the city and in the broader region, conditions have changed, making this a propitious moment for Fontana to plan for a new era in Fontana's history, a 21st Century transformation from a bedroom community to a complete community.

2.3 PURPOSE AND NEED

Whenever a community adopts or amends a general plan or a general plan element, it is subject to the California Environmental Quality Act (CEQA), usually requiring an environmental impact report (EIR). The Fontana General Plan Update and EIR are prepared concurrently. The purpose of the EIR is to identify potential significant environmental impacts of proposals, alternatives with fewer adverse impacts, and potential ways to reduce or avoid environmental damage, thereby addressing significant environmental impacts and mitigation options. The EIR evaluates the proposed Plan's effect on the physical environment as it is now, and the impact on the environment that would exist under the proposed Plan, including secondary and cumulative effects.

2.4 GENERAL PLAN UPDATE SHORT AND MEDIUM-TERM POLICIES, GOALS, AND ACTIONS

The Fontana Forward General Plan includes a number of short-and medium-term goals that are necessary prerequisites for long-term results. Each action plan includes goals, responsible parties, a target timeline, and potential resources. Most of the actions are relatively short term, but this is because many are activities that need to be started in the next few years in order to produce visible results in the medium to long term. The following policies and goals of the Fontana Forward General Plan are described below:

- **Policy**: Establish public review of progress in implementing the General Plan
  - **Goal 1**: Regular review of implementation progress is part of the city's annual calendar.
  - **Action**: Review implementation progress in a joint annual public hearing before the Planning Commission and City Council. Update the General Plan thoroughly at least every 15 to 20 years.

- **Policy**: Use the plan in preparing and approving other planning and implementation activities by City departments, decision-making bodies, and agencies.
  - **Goal 2**: The General Plan is incorporated in decision-making at multiple levels.
  - **Action**: Designate an experienced staff planner as the Long-Range Planner in the Planning Division to serve as the City's expert on the General Plan and coordinator of implementation.
- **Policy**: Support zoning changes that promote implementation of the Plan.
  - **Goal 3**: Update the city zoning development code to be compatible with the General Plan.
  - **Action:** Adopt the Downtown Code prepared in conjunction with the Downtown Area Plan. Create corridor zoning for the Walkable Mixed Use-1-Downtown and Corridors land use category using the Downtown Code as a foundation.
- **Policy**: Support e-government and digital open government systems.
  - **Goal 4**: Enhance internal and external transparency about government activities and performance.
  - **Action**: Create a performance measurement system and share the results with the public. Create an online information clearinghouse open to the public and enhance the E-government capacity of Fontana City government

2.5 PROJECT OBJECTIVES

Fontana is the Inland Empire's opportunity city. The Fontana Forward General Plan will help create diverse job opportunities and housing choices, excellent parks, and a lively downtown that is prosperous, safe, healthy, and thriving. These project objectives will be used to guide the development of project alternatives to the proposed General Plan Update analyzed in the EIR and the development of mitigation measures to reduce significant impacts to less than significant levels. The Fontana Forward General Plan objectives include the following:

- Provide more jobs in Fontana for Fontana residents. Promote a diversified economy that builds on existing businesses and develops, attracts and retains future job-creating sectors.
- Revitalize downtown as a mixed-use neighborhood and live-work-shop-play-study destination. Create a management framework and adopt form-based zoning for a walkable, mixed-use future downtown.
- Improve the central area of the city with an "i3 Neighborhoods" program: infill, infrastructure, and interconnection. Make improvements to attract new residents to the central part of the city.
- Transform Foothill Boulevard into a "Livable Corridor" with transit-oriented development. Mixed-use, higher-density centers within a half-mile radius of planned Bus Rapid Transit stops.
- Revitalize the central segments of Sierra Avenue and Valley Boulevard to make them mixed-use "Livable Corridors." Enhance walkability and adopt form-based zoning for a mixture of uses.
- Ensure that every resident has a safe ten-minute or shorter walk to a public park. Seek to develop park opportunities in underserved areas.

- Reduce the growth of traffic congestion. Use management and intelligent transportation systems to maximize the efficiency of the street system and provide travel options.
- Connect all neighborhoods with safe pedestrian and bicycle routes to parks, schools, shopping, and similar destinations.
- Promote healthy lifestyles with a Healthy Fontana advisory evaluation of new development projects.
- Create a "Sustainable Fontana" program to promote energy-efficiency, water conservation, and other "green" practices in city government and the community. Include a tree and shade plan to enhance heat resilience.

2.6 SUMMARY OF ALTERNATIVES

The Proposed Project uses new land use categories to meet the community's vision and comply with State regulations regarding environmental protection and climate change. A summary of the characteristics of the Proposed Project and land use/transportation alternatives evaluated in the EIR are as follows:

Table 2.6-1 Summary of the Characteristics of the Proposed Project and Land Use/Transportation Alternatives Evaluated in the EIR

Alternative	Description
Proposed Project	• Focuses on the re-building of Historic Route 66 (Foothill Boulevard), the downtown, Sierra Avenue into mixed use centers with walkable neighborhoods in the central city. • Reduces vehicle miles traveled by mixing uses and increasing density with walking distance of public transportation stops along Livable Corridors and creating Connected Neighborhoods and Walkable Villages. • Provides a community-based foundation that captures the City's qualities, values, and characteristics, now and in the future. • Balances the needs of city residents with potential environmental impacts.
No Project Alternative	• Continued implementation of the 2003 General Plan. • Out of date land use and transportation vision that does not anticipate the current and future needs of the city and is therefore not recommended.
Compact Scenario Alternative	• Additional increases in residential and commercial density within walking distance of existing and proposed mass transit stations. • Because of the increase in density the Compact Scenario would not be consistent with the character of the existing land uses within the WMXU-1 area and surrounding areas from a community perspective.

2.7 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

During the NOP scoping period, comments were received from the public regarding the following issues that have been addressed in the General Plan Update and analyzed in this EIR.

- Air quality and Greenhouse Gases
- Renewable energy
- Emergency preparedness and wildfires
- Public transportation and walkable neighborhoods
- Sustainability, conservation, and diversification of the water supply
- Affordable housing
- Wildlife conservation and natural opens pace
- Drought tolerant landscaping
- Walking and biking trails
- Recreation and parkland
- Roadway and aircraft noise
- Truck routes in relation to residential neighborhoods

Issues yet to be resolved include the City's decision of whether to certify the EIR and adopt the proposed mitigation measures that will be included in the Mitigation, Monitoring, and Reporting Plan that is part of the Final EIR

2.8 SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

A summary of significant environmental impacts and mitigation measure to reduce significant impacts to less than significant levels is provided in Table 2.8-1.

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
Aesthetics			
None identified	None required	Not applicable.	**MM-AES-1** For future development associated with the project located in or adjacent to residentially zoned property, the following General Condition of Approval shall be imposed: Construction documents shall include language that requires all construction contractors to strictly control the staging of construction equipment and the cleanliness of construction equipment stored or driven beyond the limits of the construction work area. Construction equipment shall be parked and staged within the project site to the extent practical. Staging areas shall be screened from view from residential properties with solid wood fencing or green fence. Construction worker parking may be located off-site with approval of the City; however, on-street parking of construction worker vehicles on residential streets shall be prohibited. Vehicles shall be kept clean and free of mud and dust before leaving the project site. Surrounding streets shall be swept daily and maintained free of dirt and debris.
Air Quality			
None identified	None required	Not applicable	**MM-AQ-1** In order to reduce future project-related air pollutant emissions and promote sustainability through conservation of energy and other natural resources, building and site plan designs shall ensure the project energy efficiencies surpass (exceed) applicable (2016) California Title 24 Energy Efficiency Standards by a minimum of 5%. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the applicant/developer and reviewed and approved by the City of Fontana prior to the issuance of the first building permit.

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
			MM-AQ-2 To reduce energy demand associated with potable water conveyance, future projects shall implement the following, as applicable: • Landscaping palette emphasizing drought tolerant plants • Use of water-efficient irrigation techniques U.S. Environmental Protection Agency (EPA) Certified WaterSense equivalent faucets, high-efficiency toilets, and water-conserving shower heads **MM-AQ-3** Future projects shall comply with applicable provisions of state law, including the California Green Standards Code (Part 11 of Title 24 of the California Code of Regulations. **MM-AQ-4** The applicant/developer shall encourage its tenants to use alternative-fueled vehicles such as compressed natural gas vehicles, electric vehicles, or other alternative fuels by providing publicly available information from the Southern California Air Quality Management District (SCAQMD), California Air Resources Board (GARB), and U.S. Environmental Protection Agency (EPA) on alternative fuel technologies. **MM-AQ-5** To promote alternative fuels and help support "clean" truck fleets, the developer/successor-in-interest shall provide building occupants and businesses with information related to the Southern California Air Quality Management District's (SCAQMD) Carl Moyer Program or other state programs that restrict operations to "clean" trucks, such as 2007 or newer model year or 2010 compliant heavy-duty vehicles, and information about the health effects of diesel particulates, the benefits of reduced idling time, California Air Resources Board

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
			regulations, and the importance of not parking in residential areas. If trucks older than 2007 model year would be used at the project site, the developer/successor-in-interest shall encourage tenants, through contract specifications, to apply in good-faith for funding for diesel truck replacement/retrofit through grant programs such as the Carl Moyer, Prop 18, VIP [On-Road Heavy Duty Voucher Incentive Program], HVIP [Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project], and SOON [Surplus Off-Road Opt-In for NOx] funding programs, as identified on SCAQMD's website (http://www.aqmd.gov). Tenants would be required to use those funds, if awarded. **MM-AQ-6** The applicant/developer shall encourage its tenants to use water-based or low volatile organic compound (VOC) cleaning products by providing publicly available information from the Southern California Air Quality Management District (SCAQMD), California Air Resources Board (CARB}, and U.S. Environmental Protection Agency (EPA) on such cleaning products. **MM-AQ-7** All on-site forklifts shall be non-diesel and shall be powered by electricity, compressed natural gas, or propane if technically feasible. **MM-AQ-8** In the event that any off-site utility and/or infrastructure improvements are required as a direct result of future projects, construction of such off-site utility and infrastructure improvements shall not occur concurrently with the demolition, site preparation, and grading phases of project construction. This requirement shall be clearly noted on all applicable grading and/or building plans.

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
			MM-AQ-9 All construction equipment shall be maintained in good operation condition so as to reduce emissions. The construction contractor shall ensure that all construction equipment is being properly serviced and maintained as per the manufacturer's specification. Maintenance records shall be available at the construction site for City of Fontana verification. The following additional measures, as determined applicable by the City Engineer, shall be included as conditions of the Grading Permit issuance: • Provide temporary traffic controls such as a flag person, during all phases of construction to maintain smooth traffic flow. • Provide dedicated turn lanes for movement of construction trucks and equipment on- and off-site. • Reroute construction trucks away from congested streets or sensitive receptor areas. • Appoint a construction relations officer to act as a community liaison concerning on-site construction activity including resolution of issues related to PM10 generation. • Improve traffic flow by signal synchronization and ensure that all vehicles and equipment will be properly tuned and maintained according to manufacturers' specifications. • Require the use of 2010 and newer diesel haul trucks (e.g., material delivery trucks and soil import/export). If the lead agency determines that 2010 model year or newer diesel trucks cannot be obtained the lead agency shall use trucks that meet EPA 2007 model year NOx and PM emissions requirements.

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
			• During project construction, all internal combustion engines/construction equipment operating on the project site shall meet EPA-Certified Tier 3 emissions standards, or higher according to the following: – January I, 2012, to December 31, 2014: All off-road diesel-powered construction equipment greater than 50 hp shall meet Tier 3 off-road emissions standards. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations. – Post-January 1, 2015: All off-road diesel-powered construction equipment greater than 50 hp shall meet the Tie. 4 emission standards, where available. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved. by a Level 3 diesel emissions control strategy for similarly sized engine as defined by CARB regulations. – A copy of each unit's certified tier specification, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
			MM-AQ-10 Prior to the issuance of any grading permits, all Applicants shall submit construction plans to the City of Fontana denoting the proposed schedule and projected equipment use. Construction contractors shall provide evidence that low emission mobile construction equipment will be utilized, or that their use was investigated and found to be infeasible for the project. Contractors shall also conform to any construction measures imposed by the SCAQMD as well as City Planning Staff. **MM-AQ-11** All paints and coatings shall meet or exceed performance standards noted in SCAQMD Rule 1113. Specifically, the following measures shall be implemented, as feasible: • Use coatings and solvents with a VOC content lower than that required under AQMD Rule 1113. • Construct or build with materials that do not require painting. • Require the-use of pre-painted construction materials. **MM-AQ-12** Projects that result in the construction of more than 19 single-family residential units, 40 multifamily residential units, or 45,000 square feet of retail/commercial/industrial space shall be required to apply paints either by hand or high volume, low pressure (HVLP) spay. These measures may reduce volatile organic compounds (VOC) associated with the application of paints and coatings by an estimated 60 to 75 percent. Alternatively, the contractor may specify the use of low volatility paints and coatings. Several of currently available primers have VOC contents of less than 0.85 pounds per gallon (e.g., Dulux professional exterior primer 100 percent acrylic). Top coats can be

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
			less than 0.07 pounds per gallon (8 grams per liter) (e.g., Lifemaster 2000-series). This latter measure would reduce these VOC emissions by more than 70 percent. Larger projects should incorporate both the use of HVLP or hand application and the requirement for low volatility coatings. **MM-AQ-13** All asphalt shall meet or exceed performance standards noted in SCAQMD Rule 1108. **MM-AQ-14** Prior to the issuance of grading permits or approval of grading plans for future development projects within the project area, future developments shall include a dust control plan as part of the construction contract standard specifications. The dust control plan shall include measures to meet the requirements of SCAQMD Rules 402 and 403. Such measures may include, but are not limited to, the following: • Phase and schedule activities to avoid high-ozone days and first-stage smog alerts. • Discontinue operation during second-stage smog alerts. • All haul trucks shall be covered prior to leaving the site to prevent dust from impacting the surrounding areas. • Comply with AQMD Rule 403, particularly to minimize fugitive dust and noise to surrounding areas. • Moisten soil each day prior to commencing grading to depth of soil cut.

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
			• Water exposed surfaces at least twice a day under calm conditions, and as often as needed on windy days or during very dry weather in order to maintain a surface crust and minimize the release of visible emissions from the construction site. • Treat any area that will be exposed for extended periods with a soil conditioner to stabilize soil or temporarily plant with vegetation. • Wash mud-covered tires and under carriages of trucks leaving construction sites. • Provide for street sweeping, as needed, on adjacent roadways to remove dirt dropped by construction vehicles or mud, which would otherwise be carried off by trucks departing project sites. • Securely cover all loads of fill coming to the site with a tight-fitting tarp. • Cease grading during periods when winds exceed 25 miles per hour. • Provide for permanent sealing of all graded areas, as applicable, at the earliest practicable time after soil disturbance. • Use low-sulfur diesel fuel in all equipment. • Use electric equipment whenever practicable. • Shut off engines when not in use. **MM-AQ-15** All industrial and commercial facilities shall post signs requiring that trucks shall not be left idling for prolonged periods pursuant to Title 13 of the California Code of Regulations, Section 2485, which limits idle times to not more than five minutes. **MM-AQ-16** The City of Fontana shall require that both industrial and commercial uses designate preferential parking for vanpools.

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
			MM-AQ-17 The proposed commercial and industrial areas shall incorporate food service. **MM-AQ-18** All industrial and commercial site tenants with 50 or more employees shall be required to post both bus and MetroLink schedules in conspicuous areas. **MM-AQ-19** All industrial and commercial site tenants with 50 or more employees shall be requested to configure their operating schedules around the MetroLink schedule to the extent reasonably feasible. **MM-AQ-20** All residential and commercial structures shall be required to incorporate high efficiency/low polluting heating, air conditioning, appliances, and water heaters. **MM-AQ-21** All residential and commercial structures shall be required to incorporate thermal pane windows and weather-stripping. **MM-AQ-22** All residential, commercial, and industrial structures shall be required to incorporate light colored roofing materials. **MM-AQ-23** Prior to approval of future development projects within the project area, the City of Fontana shall conduct project-level environmental review to determine potential vehicle emission impacts associated with the project(s). Mitigation measures shall be developed for each project as it is considered to mitigate potentially significant impacts to the extent feasible. Potential mitigation measures may require that facilities with over 250 employees (full or part-time employees at a worksite for a consecutive six-month period calculated as a monthly average), as required by the Air Quality Management Plan, implement Transportation Demand Management (TDM) programs.

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
			MM-AQ-24 New warehouse facilities or distribution centers that generate a minimum of 100 truck trips per day, or 40 truck trips with transport refrigeration units (TRUs) per day, or TRU operations exceeding 300 hours per week shall not be located closer than 1,000 feet from any existing or proposed sensitive land use such as residential, a hospital, medical offices, day care facilities, and/or fire stations (pursuant to the recommendations set forth in the CARB Air Quality and Land Use Handbook), unless the increase in health risk for such sensitive receptors due to an individual project is shown to be less than the South Coast Air Quality Management District's thresholds of significance (Maximum Incremental Cancer Risk ≥10 in 1 million; Cancer Burden >0.5 excess cancer cases [in areas ≥1 in 1 million]; and Chronic & Acute Hazard Index ≥1.0 [project increment]). With regard to expansions/modifications of existing warehouse facilities or distribution centers, this mitigation measure shall be applied to the resulting incremental net increase in truck trips or TRU operations, and any resulting net increase in health risk impacts, as compared to those existing at the time an expansion/modification project is proposed.

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
Biological Resources			
A significant impact could occur to one species of concern identified, burrowing owl, and nesting birds	**MM-BIO-1** 1. Prior to initial grading or clearing of areas of suitable habitat within the Planning Area (e.g., a vacant site with a landscape of grassland or low-growing, arid scrub vegetation or agricultural use or vegetation), a qualified biologist shall conduct a pre-construction survey, in accordance with the CDFG Staff Report on Burrowing Owl Mitigation, to determine the presence or absence of burrowing owl within the proposed area of impact. 2. Results of surveys, including mitigation recommendations (i.e., a Burrowing Owl Mitigation and Monitoring Report) shall be incorporated into the project-level CEQA compliance documentation. 3. Construction grading/clearing of areas of suitable habitat should occur between September 1 and January 31 to avoid impacts to breeding owls. If occupied burrows are discovered, they shall not be removed during nesting season (February 1 through August 31), unless a qualified biologist can determine that	Less than significant	**MM-BIO-3** The City of Fontana Planning Division shall require that all future project applicants prepare a Biological Assessment in conjunction with a project-level analysis. The Biological Assessment shall include a vegetation map of the proposed project area, analysis of the impacts associated with plant and animal species and habitats, and conduct habitat evaluations for burrowing owl, Delhi Sands flower-loving fly, San Diego pocket mouse, western mastiff bat, western yellow bat, and San Diego desert woodrat. If any of these special are determined to be present, then coordination with the U.S. Fish and Wildlife Service and/or California Department of Fish and Game shall be concluded to determine what, if any, permits or clearances are required prior to development Each project-level Biological Assessment shall include an analysis of potential impacts to rare plants and rare natural communities in accordance with the California Department of Fish and Game's November 2009 guidance for Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. For those projects located in the Delhi Sands flower-loving fly Recovery Unit, the project-level Biological Assessment shall include focused surveys. The Biological Assessment shall prescribe actions necessary to mitigate the impacts identified for a particular project. Such actions shall include either avoidance of a sensitive resource, or payment of in-lieu fees that shall be used to purchase off-site replacement habitat. In instances where transplantation/relocation, off-site preservation, or fee payment is selected, habitat

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
	either the owls have not laid eggs or are incubating eggs, or that any young from the burrows are able to forage independently. If initial grading is scheduled to occur during nesting season, the following measures shall be implemented. 4. If removal of occupied burrows is necessary, passive relocation outside of nesting season shall be implemented under the supervision of the qualified biologist. This shall include covering/excavation of burrows and installation of one-way doors as necessary. One-way doors will allow owls inside the burrow to exit but not allow them to re-enter. The biologist shall wait a minimum of one week before the burrow may be excavated to allow the owls time to leave the area.		mitigation ratios shall be a minimum of 1:1, unless a greater ratio is required by a state or federal wildlife agency. The requirements of the Biological Assessment shall be a condition of approval of the individual development project. **MM-BIO-4** Prior to any ground disturbance, trees scheduled for removal shall be evaluated by a City-approved biologist for roosting bats. If a roost is present the biologist will develop a plan to minimize impacts to the bats to the greatest extent feasible. **MM-BIO-5** The City shall encourage the preservation of natural habitat in conjunction with private or public development projects. **MM-BIO-6** Mitigation shall be provided for removal of any natural habitat, including restoration of degraded habitat of the same type, creation of new or extension of existing habitat of the same type, financial contribution to a habitat conservation fund administered by a Federal, State, or local government agency, or by a non-profit agency conservancy. **MM-BIO-7** Local CEQA procedures shall be applied to identify potential impacts to rare, threatened and endangered species. **MM-BIO-8** Evidence of satisfactory compliance shall be provided by Project Applicant with any required State and/or Federal permits, prior to issuance of grading permits for individual projects.

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
	MM-BIO-2 To avoid impacts to nesting birds and to comply with the MBTA, clearing of vegetation and removal of trees should occur between non-nesting (or non-breeding) season for birds (generally, September 1 to January 31). If this avoidance schedule is not feasible, the alternative is to carry out such activities under the supervision of a qualified biologist. This shall entail the following: 1. A qualified biologist shall conduct a pre-construction nesting bird survey no more than 14 days prior to initiating ground disturbance activities. The survey will consist of full coverage of the proposed disturbance limits and up to a 500-foot buffer area, determined by the biologist and taking into account the species nesting in the area and the habitat present. 2. If no active nests are found, no additional measures are required. 3. If "occupied" nests are found, their locations shall be mapped, species documented, and, to the degree feasible, the status of the nest (e.g., incubation of eggs, feeding of young, near fledging) recorded. The biologist shall establish a no-disturbance buffer		**MM-BIO-9** Any development that results in the potential take or substantial loss of occupied habitat for any threatened or endangered species shall conduct formal consultation with the appropriate regulatory agency and shall implement required mitigation pursuant to applicable protocols. Consultation shall be on a project-by-project basis and measures shall be negotiated independently for each development project. **MM-BIO-10** For future development proposals that could potentially affect jurisdictional drainages or wetlands (to be determined by the City of Fontana Planning Division), the project applicant shall prepare a jurisdictional delineation to determine the extent of jurisdictional area, if any, as part of the regulatory permitting process.

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
	around each active nest. The buffer area will be determined by the biologist based on the species present, surrounding habitat, and type of construction activities proposed in the area. 4. No construction or ground disturbance activities shall be conducted within the buffer until the biologist has determined the nest is no longer active and has informed the construction supervisor that activities may resume. Although significant biology impacts will be mitigated to less than significant levels through implementation of the above mitigation measures, the following mitigation measures are considered as best practices to be applied to future projects as may be necessary to reduce impacts to less than significant levels. This following list of mitigation measures is not all inclusive of mitigation measures that may be adopted for future projects but serve as a guide and performance standards that constitute the minimum level of measures to reduce environmental impacts to acceptable levels.		

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
Cultural Resources			
None identified	None required	Not applicable	**MM-CUL-1** A qualified archaeologist shall perform the following tasks, prior to construction activities within project boundaries: • Subsequent to a preliminary City review, if evidence suggests the potential for historic resources, a field survey for historical resources within portions of the project site not previously surveyed for cultural resources shall be conducted. • Subsequent to a preliminary City review, if evidence suggests the potential for historic resources, the San Bernardino County Archives shall be contacted for information on historical property records. • Subsequent to a preliminary City review, if evidence suggests the potential for sacred land resources, the Native American Heritage Commission shall be contacted for information regarding sacred lands. • All historical resources within the project site, including archaeological and historic resources older than 50 years, shall be inventoried using appropriate State record forms and guidelines followed according to the California Office of Historic Preservation's handbook "Instructions for Recording Historical Resources." The archaeologist shall then submit two (2) copies of the completed forms to the San Bernardino County Archaeological Information Center for the assignment of trinomials. • The significance and integrity of all historical resources within the project site shall be evaluated, using criteria established in the CEQA Guidelines for important archaeological resources and/or 36 CFR 60.4 for eligibility for listing on the National Register of Historic Places.

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
			• Mitigation measures shall be proposed and conditions of approval (if a local government action) recommended to eliminate adverse project effects on significant, important, and unique historical resources, following appropriate CEQA and/or National Historic Preservation Act's Section 106 guidelines. • A technical resources management report shall be prepared, documenting the inventory, evaluation, and proposed mitigation of resources within the project site, following guidelines for Archaeological Resource Management Reports prepared by the California Office of Historic Preservation, Preservation Planning Bulletin 4(a), December 1989. One copy of the completed report, with original illustrations, shall be submitted to the San Bernardino County Archaeological Information Center for permanent archiving. • If human remains are encountered on the project site, the San Bernardino County Coroner's Office shall be contacted within 24 hours of the find, and all work shall be halted until a clearance is given by that office and any other involved agencies. • All resources and data collected within the project site shall be permanently curated at an appropriate repository within the County.

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
			MM-CUL-2 If any prehistoric archaeological resources are encountered before or during grading, the developer shall retain a qualified archaeologist to monitor construction activities and to take appropriate measures to protect or preserve them for study. With the assistance of the archaeologist, the City of Fontana shall: • Enact interim measures to protect undesignated sites from demolition or significant modification without an opportunity for the City to establish its archaeological value. • Consider establishing provisions to require incorporation of archaeological sites within new developments, using their special qualities at a theme or focal point. • Pursue educating the public about the area's archaeological heritage. • Proposal mitigation measures and recommend conditions of approval (if a local government action) to eliminate adverse project effects on significant, important, and unique prehistoric resources, following appropriate CEQA guidelines. • Prepare a technical resources management report, documenting the inventory, evaluation, and proposed mitigation of resources within the project area. Submit one copy of the completed report, with original illustrations, to the San Bernardino County Archaeological Information Center for permanent archiving.

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
			MM-CUL-3 Where consistent with applicable local, State and federal law and deemed appropriate by the City, future site-specific development projects shall consider the following: In the event Native American cultural resources are discovered during construction for future development, all work in the immediate vicinity of the find shall cease and a qualified archaeologist meeting Secretary of Interior standards shall be hired to assess the find. Work on the overall project may continue during this period; • Initiate consultation between the appropriate Native American tribal entity (as determined by a qualified archaeologist meeting Secretary of Interior standards) and the City/project applicant; Transfer cultural resources investigations to the appropriate Native American entity (as determined by a qualified archaeologist meeting Secretary of Interior standards) as soon as possible; • Utilize a Native American Monitor from the appropriate Native American entity (as determined by a qualified archaeologist meeting Secretary of Interior standards) where deemed appropriate or required by the City, during initial ground disturbing activities, cultural resource surveys. and/or cultural resource excavations. **MM-CUL-4** A qualified paleontologist shall conduct a pre-construction field survey of any project site within the Specific Plan Update area that is underlain by older alluvium. The paleontologist shall submit a report of findings that provides specific recommendations regarding further mitigation measures (i.e., paleontological monitoring) that may be appropriate.

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
			MM-CUL-5 Should mitigation monitoring of paleontological resources be recommended for a specific project within the project site, the program shall include, but not be limited to, the following measures: • Assign a paleontological monitor, trained and equipped to allow the rapid removal of fossils with minimal construction delay, to the site full-time during the interval of earth-disturbing activities. • Should fossils be found within an area being cleared or graded, earth-disturbing activities shall be diverted elsewhere until the monitor has completed salvage. If construction personnel make the discovery, the grading contractor shalt immediately divert construction and notify the monitor of the find. • All recovered fossils shall be prepared, identified, and curated for documentation in the summary report and transferred to an appropriate depository (i.e., San Bernardino County Museum). • A summary report shall be submitted to City of Fontana. Collected specimens shall be transferred with copy of report to San Bernardino County Museum.

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
Geology, Soils & Seismicity			
None identified	None required	Not applicable	None identified
Greenhouse Gas Emissions			
None identified	None required	Not applicable	**MM-GHG-1** Prior to the issuance of building permits, future development projects shall demonstrate the incorporation of project design features that achieve a minimum of 28.5 percent reduction in GHG emissions from non-mobile sources as compared to business as usual conditions. With regard to expansions/modifications of existing facilities, this mitigation measure shall be applied to the resulting incremental net increase in enclosed floor area. Future projects shall include, but not be limited to, the following list of potential design features (which include measures for reducing GHG emissions related to Transportation and Motor Vehicles). *Energy Efficiency* • Design buildings to be energy efficient and exceed Title 24 requirements by at least 5 percent. • Install efficient lighting and lighting control systems. Site and design building to take advantage of daylight. • Use trees, landscaping and sun screens on west and south exterior building walls to reduce energy use. Install light colored "cool" roofs and cool pavements. • Provide information on energy management services for large energy users. • Install energy efficient heating and cooling systems, appliances and equipment, and control systems (e.g., minimum of Energy Star rated equipment).

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
			• Implement design features to increase the efficiency of the building envelope (i.e., the barrier between conditioned and unconditioned spaces). • Install light emitting diodes (LEDs) for traffic, street and other outdoor lighting. • Limit the hours of operation of outdoor lighting. *Renewable Energy* • Install solar panels on carports and over parking areas. Ensure all industrial buildings are designed to have "solar ready" roofs. • Use combined heat and power in appropriate applications. *Water Conservation and Efficiency* • Create water-efficient landscapes with a preference for a xeriscape landscape palette. • Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls. • Design buildings to be water-efficient. Install water-efficient fixtures and appliances (e.g., EPA WaterSense labeled products). • Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff. • Restrict the use of water for cleaning outdoor surfaces and vehicles. • Implement low-impact development practices that maintain the existing hydrologic character of the site to manage storm water and protect the environment. (Retaining storm water runoff on-site can drastically reduce the need for energy-intensive imported water at the site).

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
			• Devise a comprehensive water conservation strategy appropriate for the project and location. The strategy may include many of the specific items listed above, plus other innovative measures that are appropriate to the specific project. • Provide education about water conservation and available programs and incentives. *Solid Waste Measures* • Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard). • Provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas. • Provide education and publicity about reducing waste and available recycling services. *Transportation and Motor Vehicles* • Limit idling time for commercial vehicles, including delivery and construction vehicles. • Promote ride sharing programs (e.g., by designating certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading and waiting areas for ride sharing vehicles, and providing a web site or message board for coordinating rides). • Create local "light vehicle" networks, such as neighborhood electric vehicle (NEV) systems. • Provide the necessary facilities and infrastructure to encourage the use of low or zero-emission vehicles (e.g., electric vehicle charging facilities and conveniently located alternative fueling stations). • Promote "least polluting" ways to connect people and goods to their destinations.

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
			• Incorporate bicycle lanes and routes into street systems, new subdivisions, and large developments. • Incorporate bicycle-friendly intersections into street design. • For commercial projects, provide adequate bicycle parking near building entrances to promote cyclist safety, security, and convenience. For large employers, provide facilities that encourage bicycle commuting (e.g., locked bicycle storage or covered or indoor bicycle parking). • Create bicycle lanes and walking paths directed to the location of schools, parks, and other destination points.
Hazards & Hazardous Materials			
None identified	None required	Not applicable	**MM-HAZ-1** The City shall require that new proposed facilities involved in the production, use, storage, transport or disposal of hazardous materials be located a safe distance from land uses that may be adversely impacted by such activities. Conversely, new sensitive facilities, such as schools, child-care centers, and senior enters, shall not to be located near existing sites that use, store, or generate hazardous materials. **MM-HAZ-2** The City shall assure the continued response and capability of the San Bernardino County Fire Department/Fontana Fire Protection District to handle hazardous materials incidents in the City and along the sections of freeways that extend across the City.

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
			MM-HAZ-3 The City shall require all businesses that handle hazardous materials above the reportable quantity to submit an inventory of the hazardous materials that they manage to the San Bernardino County Fire Department - Hazardous Materials Division in coordination with the Fontana Fire Protection District. **MM-HAZ-4** The City shall identify roadways along which hazardous materials are routinely transported. If essential facilities, such as schools, hospitals, child care centers or other facilities with special evacuation needs are located along these routes, identify emergency response plans that these facilities can implement in the event of an unauthorized release of hazardous materials in their area. **MM-HAZ-5** A Phase I Site Assessment shall be prepared in accordance with American Society of Testing and Materials Standards and Standards for Practice for All Appropriate Inquiries prior to issuance of a Grading Permit for future development. The Phase I Environmental Site Assessment shall investigate the potential for site contamination, and will identify Specific Recognized Environmental Conditions (i.e., asbestos containing materials, lead-based paints, polychlorinated biphenyls, etc.) that may require remedial activities prior to land acquisition or construction.
Hydrology & Water Quality			
None identified	None required	Not applicable	None identified
Land Use			
None identified	None required	Not applicable	None identified

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
Noise			
None identified	None required	Not applicable	**MM-NOI-1** Prior to issuance of a grading permit, a developer shall contract for a site-specific noise study for the parcel. The noise study shall be performed by an acoustic consultant experienced in such studies and the consultant's qualifications and methodology to be used in the study must be presented to City staff for consideration. The site-specific acoustic study shall specifically identify potential noise impacts upon any proposed sensitive uses (addressing General Plan buildout conditions), as well as potential project impacts upon off-site sensitive uses due to construction, stationary and mobile noise sources. Mitigation for mobile noise impacts, where identified as significant, shall consider facility siting and truck routes such that project-related truck traffic utilizes existing established truck routes. Mitigation shall be required if noise levels exceed 65 dBA, as identified in Section 30-182 of the City's Municipal Code. **MM-NOI-2** To reduce impacts related to heavy construction equipment moving and operating on site during project construction, grading, demolition, and paving prior to issuance of grading permits, the applicant shall ensure that the following procedures are followed: • Construction equipment, fixed or mobile, shall be properly outfitted and maintained with feasible noise-reduction devices to minimize construction generated noise. • Laydown and construction vehicle staging areas shall be located away from noise sensitive land uses if feasible.

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
			• Stationary noise sources such as generators shall be located away from noise sensitive land uses, if feasible. • Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow surrounding property owners to contact the job superintendent 24 hours a day to report noise and other nuisance-related issues, if necessary. The point of contact shall be available 24 hours a day, 7 days a week and have authority to commit additional assets to control dust after hours, on weekends, and on holidays. In the event that the City of Fontana receives a pattern of noise complaints, appropriate corrective actions shall be implemented, such as on site noise monitoring during construction activities, and a report of the action shall be provided to the reporting party.
Population & Housing			
None identified	None required	Not applicable	None identified
Public Services, Utilities, & Recreation			
None identified	None required	Not applicable	None identified

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
Transportation			
General Plan Update would result in potentially significant impacts to the traffic and transportation network due to: • ADT would exceed an established LOS threshold at Citrus Avenue between Arrow Boulevard and Foothill Boulevard, which is forecast to operate at LOS "F" under General Plan buildout conditions: • Citrus Avenue exceeds the San Bernardino CMP threshold of LOS "E", resulting in a significant impact based on the CMP criteria to maintain LOS "E" or better	**MM-TRA-1** To mitigate the impact of additional traffic volumes on the segment of Citrus Avenue between Foothill Boulevard and Arrow Boulevard, roadway modifications to provide sidewalks where currently missing, the addition of Class II bicycle lanes in accordance with the City's ATP, and additional traffic calming measures as necessary to reduce traffic volumes to a level appropriate for the roadway's designation as a Secondary Highway will be constructed. Additionally, the roadway could be modified by removing on-street parking and constructing raised medians to increase the roadway's vehicular capacity. The City utilizes a DIF, paid by new development as it occurs in the City, to fund projects such as the above mitigation measure.	Less than significant	**MM-TRA-2** Prior to the issuance of building permits, the project applicant shall participate in the City of Fontana's Development Impact Fee (DIF) program by paying the requisite DIF fee at the time of the building permit. The Measure I fee program relies upon local jurisdictions to implement mitigation programs by collecting fees for regional improvements; however, the San Bernardino County Transportation Authority (SBCTA) does not dictate how individual jurisdictions allocate their costs for regional improvements to new development. Instead, each jurisdiction, including the City of Fontana, is required to develop its own schedule of fees and implementation programs (often through a capital improvement program (CIP)) that can demonstrate achievement of contribution levels set in the Nexus Study for each jurisdiction. The Nexus study is based on having each jurisdiction subject to the Nexus Study fund its share of needed regional improvements by developing the facilities within its own jurisdiction. The Nexus Study does not rely on the exchange of impact fees between jurisdictions as a means of mitigating impacts of development occurring within one jurisdiction on the regional transportation facilities of another jurisdiction. As a result, there is no allocation of arterial improvement costs to jurisdictions outside the jurisdiction in which proposed development project is located. Impacts of development throughout the region addressed in the Nexus Study are instead mitigated by requiring each jurisdiction to be responsible for needed arterial improvements within its own jurisdiction, including the

Table 2.8-1 Summary of Significant Project Impacts

Significant Project Impacts	Mitigation to Reduce Significant Impacts	Significance with Mitigation	Mitigation to Lessen Future Project Impacts
			share of improvements in traffic generated in other jurisdictions. Thus, as development occurs within the various jurisdictions subject to Nexus Study fees, all of the regional improvements included within the Nexus Study throughout the County of San Bernardino will eventually be built **MM-TRA-3** Prior to issuance of a grading permit, applicants for future development associated with proposed projects shall prepare site-specific traffic studies, to the satisfaction of the City's Engineering Department. As determined by these subsequent traffic studies, traffic improvements identified as mitigation measures shall be implemented as a condition of the approved future development project, either through direct construction by the project applicant and/or through development impact fees. **MM-TRA-4** The City of Fontana shall perform monitoring of traffic generation and phasing of development within the project area to defer or eliminate identified improvements due to potential circulation impact changes or reduced land use intensities. This monitoring shall be achieved through project-specific traffic studies tied to future development within the Specific Plan Update area with land use in excess of 100,000 square feet of non-residential land use.

3.0 PROJECT DESCRIPTION

3.1 BACKGROUND

Under California law (Government Code Section 65300 et seq.), every city and county is required to have a general plan. The general plan is to be comprehensive and long range in perspective. For cities, the general plan guidelines the physical development of the incorporated city, plus any land outside city boundaries that has a relationship to the city's planning activities.

The project analyzed in this Program Environmental Impact Report (EIR) is the adoption and long-term implementation of the Fontana Forward General Plan and subsequent amendments to Article IV (Zoning Districts) of Chapter 30 of the Fontana Municipal Code (Zoning and Development Code) adopted to implement the updated General Plan.

The Fontana Forward plan includes these elements, stand-alone or combined as required by statue (Government Code Section 65302): land use; circulation; housing; conservation and open space combined; noise and safety combined; as aspects of several other elements. In addition, the plan includes optional elements on health, economic development, infrastructure, sustainability and resilience, and a Downtown Area Plan. The Fontana Forward General Plan, will continue to serve as the blueprint for the City by setting forth goals, policies, and programs that will guide the long-term physical development and quality of life in the community. The primary focus of the Fontana Forward Plan is to: 1) update the Land Use Policy Map to target revitalization efforts; 2) ensure that the Circulation Element comports with the amended land use plan and addresses all current planning laws; 3) update elements to incorporate provisions that respond to State laws adopted since 2003 (the date of adoption of the current General Plan), and 4) update other elements to reflect updated baseline conditions and to refine policies to reflect current City practices and programs. The City has established 2035 as the horizon year for the updated General Plan, meaning that 2035 represents the year by which the City would expect that the General Plan's policies and programs would be realized, and a new comprehensive review of the plan may be warranted.

This EIR has been prepared in accordance with the *California Environmental Quality Act* (CEQA) (Public Resource Code, Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations, Section 15000 et seq.). This EIR is a Program EIR prepared in accordance with State CEQA Guidelines Section 151618. Section 15168 allows for the preparation of a Program EIR for a series of actions that can be characterized as a single project.

3.2 PROJECT LOCATION

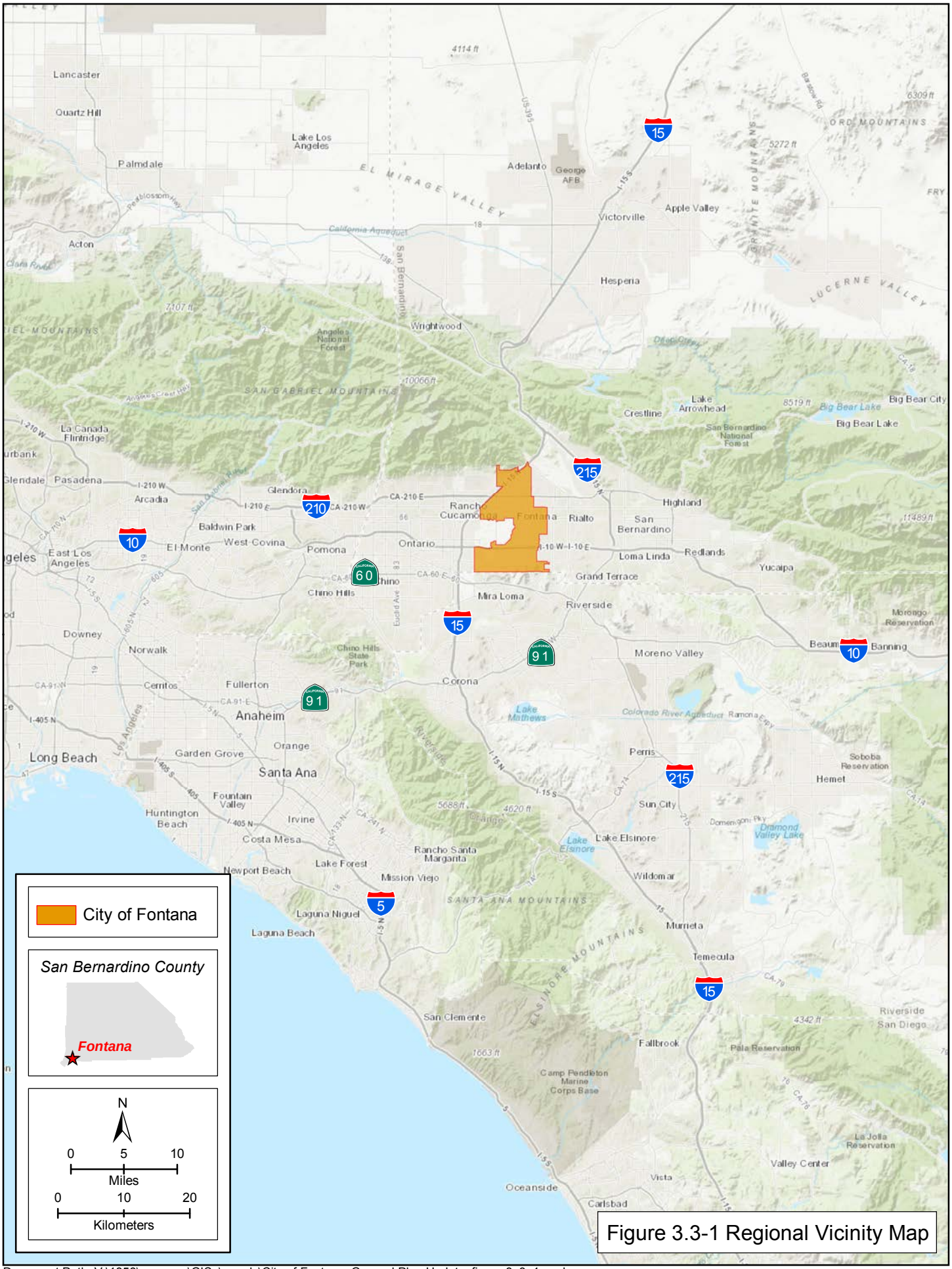
The City of Fontana is located in southern San Bernardino County. Fontana is located in a valley and is adjacent to major roadways, including Interstates 10 and 15 as well as State Route 210. Because of the city's proximity to these major roadways, the City has been growing rapidly with industrial, commercial, and residential development expanding northward. The City encompasses approximately 52 square miles, including the City's Sphere of Influence (SOI). Of this land area, 6,000 acres (11,000 acres in the SOI) are designated for commercial and industrial uses. With the city's close vicinity to key roadways, trucking-based industries and warehouse distribution centers for large companies have flourished in Fontana, including distribution centers for Target and Mercedes Benz. The City is also home to a major-medical center, Kaiser Permanente, which attracts employees and patients to Fontana.

3.3 EXISTING GENERAL PLAN

The current City of Fontana General Plan was adopted in 2003. The following twelve chapters comprise the General Plan:

1. Introduction
2. Executive Summary
3. Land Use Element
4. Circulation Element
5. Housing Element
6. Community Design Element
7. Economic Development Element
8. Open Space & Conservation Element
9. Parks, Recreation, and Trails Element
10. Safety Element
11. Noise Element
12. Air Quality Element

The Housing Element was completed and approved in 2014 before the General Plan Update and will be updated again in 2021, as required by state law.


City of Fontana
San Bernardino County
Fontana
N
0 5 10
Miles
0 10 20
Kilometers
Lancaster
Quartz Hill
Palmdale
Lake Los Angeles
Acton
Adelanto
George AFB
Victorville
Apple Valley
Hesperia
Wrightwood
Angeles National Forest
San Gabriel Mountains
Crestline
Lake Arrowhead
Big Bear Lake
Big Bear City
San Bernardino National Forest
La Canada Flintridge
Glendale
Pasadena
Arcadia
Glendora
Baldwin Park
West Covina
El Monte
East Los Angeles
Pomona
Ontario
Rancho Cucamonga
Fontana
Rialto
San Bernardino
Highland
Loma Linda
Redlands
Yucaipa
Grand Terrace
Chino
Chino Hills
Mira Loma
Riverside
Moreno Valley
Norwalk
Downey
Cerritos
Fullerton
Anaheim
Corona
Lake Mathews
Perris
Sun City
Lake Elsinore
Wildomar
Murrieta
Temecula
Beaumont
Banning
Morongo Reservation
Soboba Reservation
Hemet
Long Beach
Garden Grove
Orange
Santa Ana
Fountain Valley
Huntington Beach
Irvine
Costa Mesa
Newport Beach
Lake Forest
Rancho Santa Margarita
Mission Viejo
Laguna Niguel
Laguna Beach
San Clemente
Camp Pendleton Marine Corps Base
Fallbrook
Pala Reservation
Oceanside
Carlsbad
Vista
Valley Center
La Jolla Reservation
Riverside
San Diego
Chino Hills State Park
Santa Ana Mountains
Elsinore Mountains
Colorado River Aqueduct
Ramona Expy
Domenigoni Pky
Diamond Valley Lake
Big Morongo Canyon Preserve
Yucca Valley
Twentynine Palms
Joshua Tree
Morongo Valley
Desert Hot Springs
Palm Springs
Cathedral City
Rancho Mirage
Palm Desert
Indio
Coachella
Thousand Palms
Indian Canyons
Cabazon
Banning
Beaumont
Calimesa
Yucaipa
Redlands
Loma Linda
Grand Terrace
Colton
Rialto
Bloomington
Highland
San Bernardino
Mentone
Crafton
Yucaipa
Calimesa
Beaumont
Banning
Cabazon
Morongo Valley
Yucca Valley
Twentynine Palms
Joshua Tree
Desert Hot Springs
Palm Springs
Cathedral City
Rancho Mirage
Palm Desert
Indio
Coachella
Thousand Palms
Indian Canyons
Lake Elsinore
Canyon Lake
Menifee
Wildomar
Murrieta
Temecula
Lake Elsinore
Canyon Lake
Menifee
Sun City
Perris
Hemet
San Jacinto
Soboba Reservation
Morongo Reservation
Pala Reservation
La Jolla Reservation
Valley Center
Vista
Oceanside
Carlsbad
San Clemente
Fallbrook
Camp Pendleton Marine Corps Base
Laguna Beach
Laguna Niguel
Mission Viejo
Lake Forest
Newport Beach
Costa Mesa
Irvine
Huntington Beach
Fountain Valley
Garden Grove
Orange
Santa Ana
Long Beach
Norwalk
Downey
Cerritos
Fullerton
Anaheim
Chino Hills State Park
Chino Hills
Mira Loma
Riverside
Moreno Valley
Corona
Lake Mathews
Perris
Sun City
Lake Elsinore
Wildomar
Murrieta
Temecula
Beaumont
Banning
Morongo Reservation
Soboba Reservation
Hemet
Rancho Santa Margarita

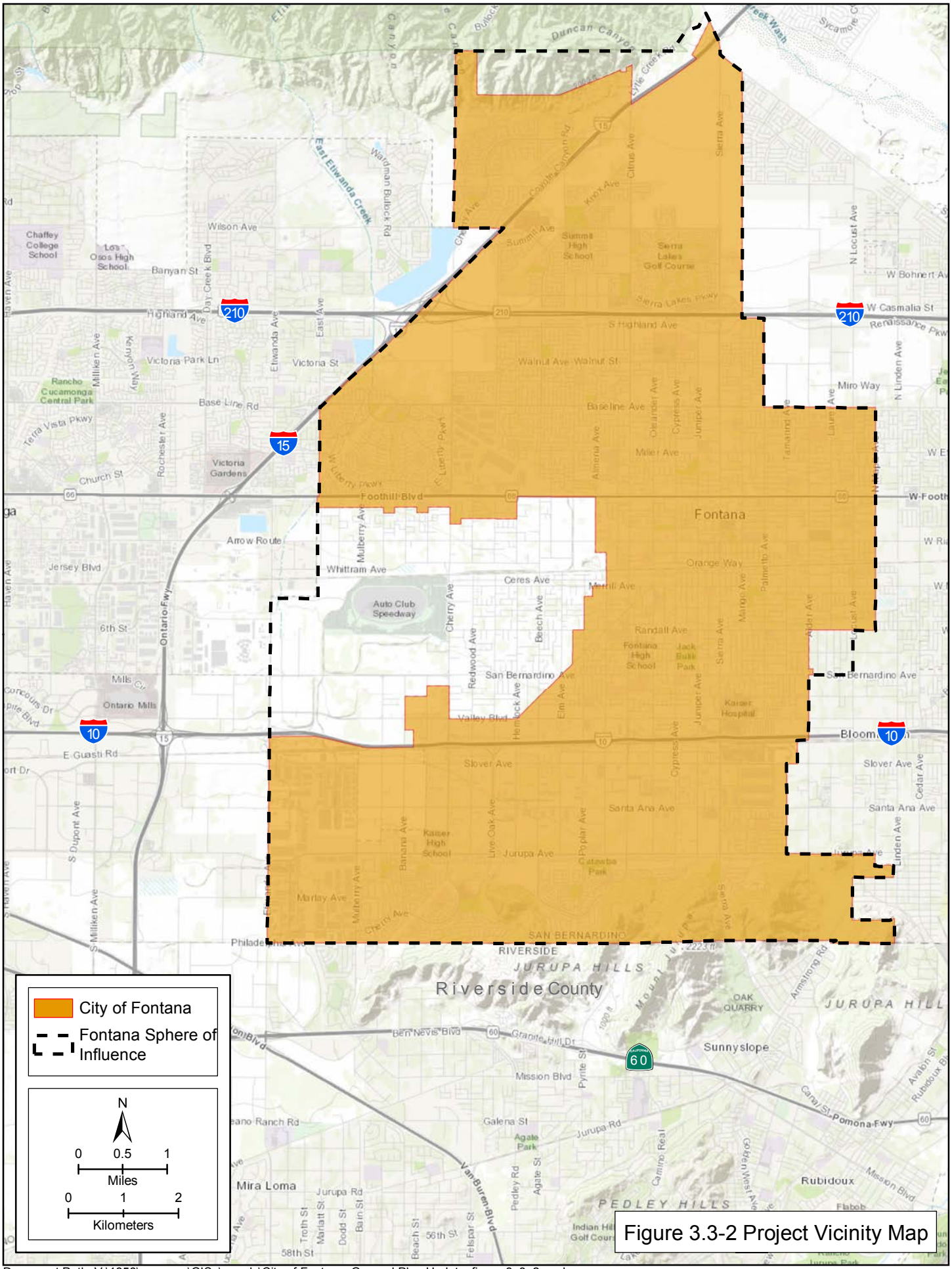


Figure 3.3-2 Project Vicinity Map

Document Path: V:\1858\resource\GIS__mxds\City of Fontana_General Plan Update_figure 3_3_2.mxd

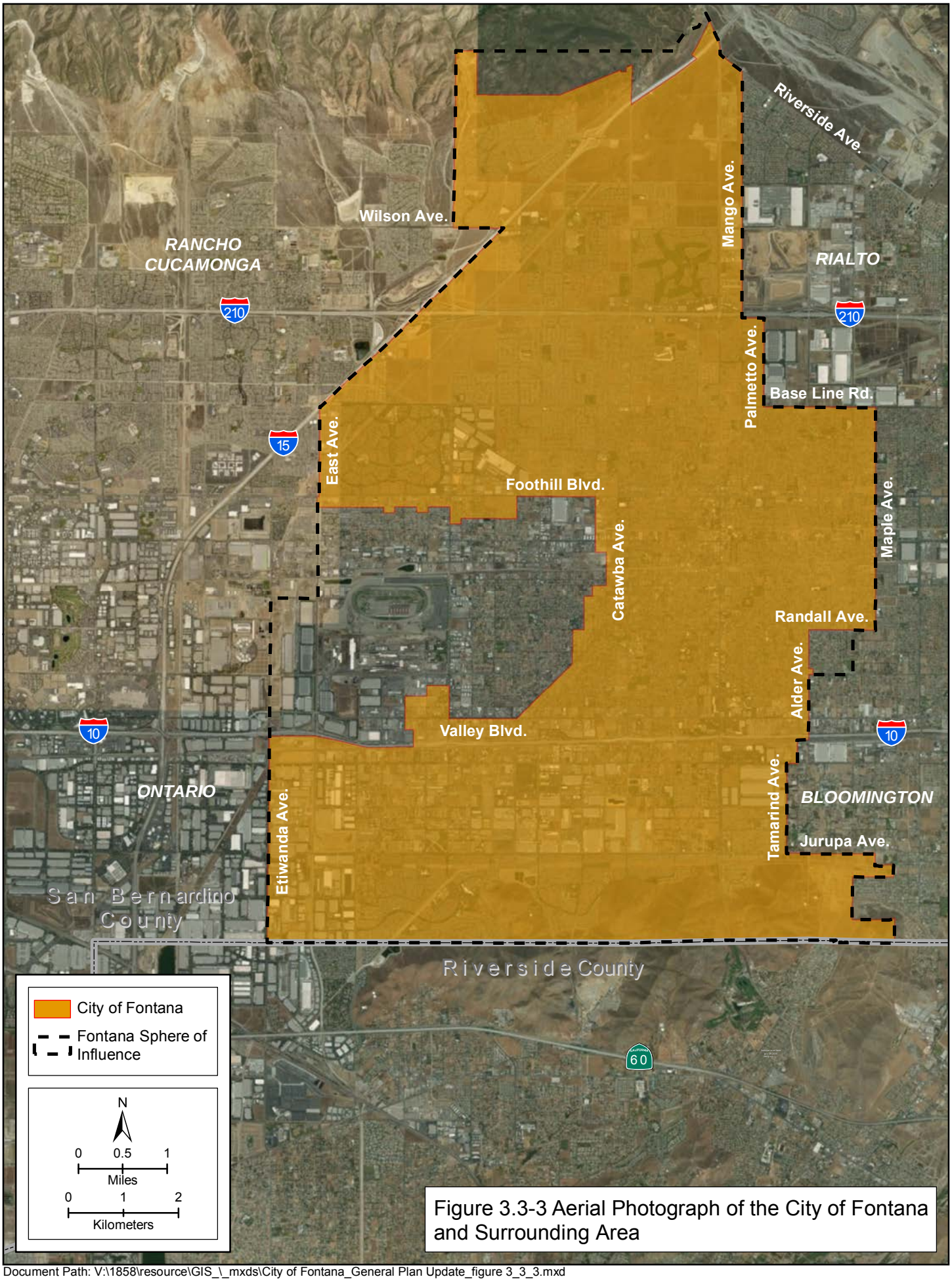


Figure 3.3-3 Aerial Photograph of the City of Fontana and Surrounding Area

Document Path: V:\1858\resource\GIS__mxds\City of Fontana_General Plan Update_figure 3_3_3.mxd

3.4 FONTANA FORWARD GENERAL PLAN UPDATE

Every city and county in California must prepare a comprehensive, long-term general plan to guide future development in that jurisdiction. California state law requires each city and county to adopt a general plan "for the physical development of the county or city, and any land outside its boundaries which bears relation to its planning" (California Government Code, Section 65300). A general plan expresses the community's development goals and embodies public policies relative to the distribution of future land uses, both public and private.

The proposed Land Use, Zoning and Urban Design Element establishes an overall development capacity for the City and serves as a policy guide for determining the appropriate physical character of the City's approximately 37 miles of incorporated area, with an additional 15 square miles in the City's SOI. The highest concentration of development is within the central "City Core" area, which includes single- and multi-family dwelling units and numerous businesses located along Sierra Avenue, the main north-south corridor in the City. Industrial development is located primarily along I-10 in the southern portion of the city and in the western SOI. This area also contains the California Speedway and over 5,000 predominantly single-family residences. The most northern edge of the city and the northern SOI are largely undeveloped, with some agricultural uses and scattered residential development.

The Zoning and Development Code and Area Plan serve as the primary tools to implement General Plan land use policies. Zoning districts that correspond to General Plan land use designations establish use regulations, development standards, and design criteria for all types of development in Fontana. Following adoption of the Fontana Forward plan, the City will undertake focused amendments to the Zoning and Development Code to achieve consistency between these documents and the General Plan. Thus, subsequent amendments to the Zoning Code to implement the Fontana Forward General Plan described below are considered as part of the project.

3.5 UPDATED CHAPTERS/ "ELEMENTS"

The Fontana Forward General Plan covers a broad range of topics in sixteen chapters. These chapters or "elements" include a summary of existing conditions and current trends, the planning process, and goals, policies and actions for many different topic areas that will affect the physical and economic development of the city over the next twenty years. The chapters are grouped into five sections, each of which starts with a summary of the contents of that section. Each chapter is composed of several sections: the topic as expressed in the Vision and Principles; a table of Goals and Policies; Findings and Challenges that summarize key existing conditions; What the Community Said, with relevant public engagement comments; and a section of Policies and Actions to Achieve the Goals. Chapter 14 is a Downtown Area Plan whose somewhat modified organization reflects the nature of its content. Chapter 16 includes an action plan matrix that covers all topic chapters. The General Plan can be read all the way through or selectively, according to the reader's interests. Table 3.5-1 illustrates the key components of the 2003 General Plan versus the 2018 General Plan Update. In addition, a

summary on each new element of the Fontana Forward General Plan is provided below for further clarification.

Table 3.5-1 Key Components of the 2003 General Plan Versus the 2018 General Plan Update

2003 General Plan Update	2018 General Plan Update
Chapter 1 – Introduction	**Chapter 1** – Vision and Principals
Chapter 2 – Executive Summary	**Chapter 2** – Trends for Fontana's Future
Chapter 3 – Land Use Element	**Chapter 3** – Engaging the Fontana Community
Chapter 4 – Circulation Element	**Chapter 4** – Community and Neighborhoods
Chapter 5 – Housing Element	**Chapter 5 -** Housing
Chapter 6 – Community Design Element	**Chapter 6** – Building a Healthier Fontana
Chapter 7 – Economic Development Element	**Chapter 7** – Conservation, Open Space, Parks and Trails
Chapter 8 – Public Facilities, Services & Infrastructure Element	**Chapter 8** – Public and Community Services
Chapter 9 – Open Space & Conservation Element	**Chapter 9** - Community Mobility and Circulation
Chapter 10 – Parks, Recreation & Trails Element	**Chapter 10** - Infrastructure and Green Systems
Chapter 11 – Safety Element	**Chapter 11** - Noise and Safety Element
Chapter 12 – Noise Element	**Chapter 12** - Sustainability and Resilience
Chapter 13 - Air Quality Element	**Chapter 13** - Economy, Education, and Workforce Development
	Chapter 14 - Downtown Area Plan
	Chapter 15 - Land Use, Zoning, and Urban Design
	Chapter 16 - Stewardship and Implementation

3.5.1 Chapter 4: Community and Neighborhoods

This Element focuses on attributes that contribute to the form, character and quality of life in the communities and neighborhoods where people live. This includes historic resources that link Fontana to its past, the City's neighborhood types, and discussion of potential housing options for both market-rate and affordable housing as Fontana grows. A separate, required Housing Element, prepared using the required methodology and approved by the State, covers the years 2014-2021. A summary of the Housing Element appears in Chapter 5.

3.5.2 Chapter 5: Housing

This chapter of the General Plan Update provides a summary of the State-approved 2014-2021 Housing Element, prepared according to State requirements and on the State timetable.

3.5.3 Chapter 6: Health and Wellness

This element identifies a shared vision and set of values for addressing health and wellness within Fontana, including goals for the future physical development that will result in a healthier city. As a chapter of the General Plan Update, the Health and Wellness Element provides high-level

goals; policies, strategies, and performance measures to achieve the goals; and an implementation program of actions to improve health. Since 2004, the City's Healthy Fontana program has made health and wellness a priority, especially with efforts to promote healthy eating and physical activity, as well as development patterns that support a healthy lifestyle.

3.5.4 Chapter 7: Conservation, Open Space, Parks and Trails

Open space and parks are very important to Fontana residents and a key aspect of what they like about living in Fontana. They want existing parks to be well-maintained and improved, and they support the addition of new parks and trails. Moreover, residents recognize the importance of conserving sensitive lands, such as the foothills at the north and south edges of the city, and they would like to see more opportunities for nature-based recreation—for example, hiking trails—in these locations.

3.5.5 Chapter 8: Public and Community Services Department

This Element of the Fontana Forward Plan focuses on three important aspects of municipal service provision: public safety, public facilities, and the many services provided by the Community Services department. Fontana residents are generally very satisfied with the public services and facilities provided by the City. Continuing this high level of service provision while making improvements is the theme of this element of the plan.

3.5.6 Chapter 9: Community Mobility and Circulation

The Community Mobility and Circulation Element has been updated to expand the options for transit and "active transportation" (pedestrian and bicycle mobility) for Fontana. It is aligned with the Southern California Association of Governments (SCAG) 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy concepts of Neighborhood Mobility Areas and Livable Corridors. These concepts are adapted for the Fontana General Plan Update as "Connected Neighborhoods" and mixed-use development along the central segments of Sierra Avenue, Foothill Boulevard, and Valley Boulevard to form Fontana's "Livable Corridors."

3.5.7 Chapter 10: Infrastructure and Green Systems

Fontana's public infrastructure systems and facilities represent over $1.4 billion of investment made by previous and current generations and are critical to economic prosperity and quality of life. Fontana depends on regional agencies and privately-owned utilities for many infrastructure services, including drinking water, wastewater treatment, and power, and it is subject to state standards and regulations. State legislation promotes resource-efficient infrastructure systems. The Fontana Department of Public Works is responsible for maintenance of city property, including parks and trails, streets, sewer lines and lift stations, and City buildings; for stormwater management; and for maintaining the City fleet.

3.5.8 Chapter 11: Noise and Safety Element

The main goal of this chapter is to combine the Goals and Policies of the Noise and Safety Elements of the 2003 General Plan into one Noise and Safety Element supported by detailed recent data in the Hazard Mitigation Plan.

3.5.9 Chapter 12: Sustainability and Resilience

In this element, sustainability and resilience is focused especially on resource efficiency and planning for climate change. However, the reality is that sustainability and resilience are broader concepts that are increasingly embedded in a wide range of community values and activities—health, transportation, land use, open space preservation, and infrastructure—and reflected in the General Plan elements on these topics.

3.5.10 Chapter 13: Economy, Education, and Workforce Development

This Element of the Fontana Forward Plan focuses on providing more jobs in Fontana for Fontana residents by promoting a diversified economy that builds on existing businesses and develops, attracts and retains future job-creating sectors. This Element creates incentives to attract new retailers and restaurants to locate in the Downtown Area Plan District. In addition, this Element explores creation of an incubator and/or coworking space for start-up businesses.

3.5.11 Chapter 14: Downtown Area Plan

This Element of the Fontana Forward Plan encourages a mix of uses in the downtown core, appealing to a wide range of customer types, with a focus on families. This Element will ensure that new infill development is compatible in scale and character with the existing neighborhood while ensuring that transportation and utility infrastructure keeps pace with the neighborhood character.

3.5.12 Chapter 15: Land Use, Zoning, and Urban Design

The Land Use, Zoning, and Urban Design Element includes an amended Land Use Plan. The amendments will provide new development opportunities in targets areas and along corridors that can accommodate such development. The strategy behind these targeted land use changes is to identify focus areas in the City that will benefit from allowing property owners to maximize development potential on vacant or underutilized properties. The amended Land Use Plan includes:

- The Future Land Use Map established two new mixed-use categories for Walkable Mixed Use (WMU). These categories are very different in character from the land use categories that have been retained from the Existing Land Use Map.

- Walkable Mixed-Use Downtown and Corridors (WMXU-1) residential densities range from 24 to 39 dwelling units per acre and non-residential uses have a maximum Floor Area Ratio (FAR) of 2.0.
- Walkable Mixed-Use Urban Village (WMXU-2) residential densities range from 12 to 24 dwelling units per acre, and non-residential uses can have up to an FAR of 1.0.

3.5.13 Chapter 16: Stewardship and Implementation

This chapter of the General Plan Update discusses overall stewardship of the plan to keep it useful and current by creating systems and procedures to make sure that the plan is used to guide decision-making and that it is evaluated regularly to see if strategies are working and if it continues to reflect community goals.

3.6 LAND USE ACREAGE COMPARISON

Two new mixed-use land use designations have been established (WMXU-1 & WMXU-2), which total approximately 2,057 acres of new mixed-use land uses. Table 3.6-1 is a chart of the difference in acreages of the 2003 General Plan and the 2018 General Plan Update.

Table 3.6-1 Difference in Acreages of the 2003 General Plan and the 2018 General Plan Update

Land Use	2003 General Plan (acres)**	2018 General Plan Update (acres)*	Difference +/-
Residential	15,723	15,474	-249
Commercial	2,425	1,170	-1,255
Industrial	8,149	8,526	+377
Mixed-Use	1,075	2,564	+1,489
Public	3,710	3,328	-382
Open Space	1,569	1,599	+30
Total	**33,428***	**33,454***	

NOTES:
*Source: General Plan Update (Chapter 15), City of Fontana
**Source: 2003 Environmental Impact Statement, City of Fontana
* Total acreage includes roads and right-of-way not shown on chart

4.0 ENVIRONMENTAL SETTING

The City prepared a Background Report to complement the General Plan Update process in April 2016 (Appendix B). The Background Report provides information on the current conditions and future trends in the City as well as environmental baseline information that has been used in developing this EIR. The following discussion summarizes key points from the Background Report that are applicable to the environmental analyses presented in this EIR.

4.1 REGIONAL SETTING

Incorporated in 1952, the City of Fontana is part of the Inland Empire, which is located approximately 50 miles east of the City of Los Angeles. The geographic boundaries of the Inland Empire are blurry, but the term is commonly used to describe western San Bernardino and Riverside counties (the Riverside-Ontario-San Bernardino Metropolitan Statistical Area) and their combined population of approximately 4 million people. Fontana is the second-most populous city in San Bernardino County and the third-most populous in the Inland Empire (after Riverside and San Bernardino). The growth of the Inland Empire after World War II reflected Southern California's expanding population drawn by an economy based on defense, manufacturing, construction, and entertainment—with the Inland Empire primarily functioning as the bedroom community for jobs in the coastal counties. By the 1990s and 2000s, some parts of the Inland Empire were attracting non-residential investment, particularly in logistics, manufacturing and services, including a growing number of professionals.

4.2 PHYSICAL SETTING

The City of Fontana is a highly-urbanized area comprised of residential, commercial, agricultural and industrial uses, as well as supporting public uses. To the north of the City limits is the City's Sphere of Influence and the San Bernardino National Forest; to the west are unincorporated Sphere of Influence lands and the City of Rancho Cucamonga; to the south is the City of Jurupa Valley, which contains considerable residential development; and to the east are the City of Rialto and Sphere of Influence lands. The highest concentration of development is within the central "Downtown" area, which contains a large amount of single and multiple family dwelling units with numerous commercial business located along Sierra Avenue, the main north-south corridor in the City.

4.3 DEMOGRAPHICS

Now the third-most populous city in the Inland Empire, after Riverside and San Bernardino, Fontana more than doubled its population between 1960 and 1980, and more than quintupled its population between 1980 and 2014. This tremendous growth has been made up of families seeking an affordable suburban lifestyle. The Southern California Association of Governments (SCAG), in its 2016-2040 Regional Transportation Plan, projects a Fontana population in 2040 of

280,900 with 74,000 households. This assumes an average household size of 3.8 persons, slightly lower than the 2015 estimated average of 4.0 persons. Population projections are based on interpretation of historical trends in natural increase (births and deaths) and net migration. Future population and household growth in Fontana will also depend on housing and employment markets. The following key demographics for the City of Fontana are summarized below:

- Fontana is a growing community of 204,312 people.
- Fontana is the 21st largest city in California, 3rd largest in the Inland Empire and 2nd largest in San Bernardino County.
- Fontana has a young population, with a median age of 29, compared to the state median of 36.
- Fontana is a family community: 58% of total households include children under 18.
- Fontana has more children and fewer seniors by percentage than the county or the state.
- The average household size in the city is 4.0 people, compared to the state average of 2.9 people.
- Most current residents came to Fontana recently. Seven percent arrived in 2010 or later, and 90% arrived in 1990 or later.
- Fontana is racially diverse: 46% of the population identifies as White, 9% as Black or African-American, and 36% identifies as "other" or two or more races. The last category indicates multiracial identify, often chosen by persons of Hispanic background.
- Hispanics can be of any race. Fontana is 69% Hispanic.
- SCAG projected (as of 2015) that Fontana's population in 2040 would reach 280,900. That means the city would have nearly 74,000 more people 25 years from now, living in 20,000-24,000 new households, depending on average household size.

5.0 ENVIRONMENTAL IMPACT ANALYSIS

This chapter discusses potential environmental effects resulting from the General Plan Update for the specific issue areas that were determined by the City as having the potential to experience significant impacts. Significant effect is defined by *California Environmental Quality Act* (CEQA) Guidelines §15382 as:

> …a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment, but may be considered in determining whether the physical change is significant.

The assessment of each issue area begins with a discussion of the environmental setting related to the issue. The significance thresholds from CEQA Guidelines Appendix G are presented which are used to determine whether potential effects are significant. The assessment of environmental impacts follows with a determination of the significance of each impact. Mitigation measures are presented for significant impact, and the level of significance after mitigation is described. References used and cited are presented for each issue area analyzed. Impacts can be described as direct, indirect, or cumulative. Cumulative impacts are discussed in Section 7.1.

Impacts are classified as:

> Significant and unavoidable. An impact that cannot be reduced to below the significance threshold level given reasonably available and feasible mitigation measures. Such an impact requires a Statement of Overriding Considerations to be issued if the project is approved per 15093 of the CEQA Guidelines.
>
> Significant but mitigatable. An impact that can be reduced to below the significance threshold level given reasonably available and feasible mitigation measures. Such an impact requires findings under 15091 of the CEQA Guidelines.
>
> Less than Significant. No impact or an impact that may be adverse, but does not exceed the significance threshold levels and does not require mitigation measures.

5.1 AESTHETICS

This section describes the City's scenic resources, and landscape and neighborhood characteristics, and addresses the potential impacts on aesthetic and visual resources associated with implementation of the General Plan Update.

5.1.1 Environmental Setting

The City of Fontana is located on a desert valley floor between the San Gabriel Mountains to the north and the Jurupa Hills to the south. Elevations range from approximately 1,700 feet above mean sea level (msl) in the northern portion of the valley and 1,000 feet msl in the southern portion. West and southwest of the City are the Cities of Rancho Cucamonga and Ontario, respectively; to the east is the City of Rialto.

5.1.1.1 Scenic Views

The San Gabriel Mountains are the City's most prominent visual feature, rising dramatically above the community with scenic views toward the mountains. Panoramic views also exist from the base of the mountains toward Fontana. The Jurupa Hills – the highest point in the City at 1,900 msl – offer scenic vistas of the San Gabriel Mountains and surrounding valleys, particularly from Martin Tudor Jurupa Hills Regional Park, which contains bicycle and hiking trails. Other significant natural landforms in Fontana include Lytle Creek and other dry washes that have intermittent water flow from the mountains, and are visible from the I-15 corridor in the northern portion of the City.

There are no scenic highways officially designated by Caltrans within or adjacent to the Project area, and no roadways within the Project area are currently eligible for scenic highway designation (CALTRANS, 2018).



Figure 5.1-1 View of the San Gabriel Mountains

5.1.1.2 Aesthetic Characteristics of City Land Use Types

While scenic views are often characterized by views of a natural feature or aesthetic resource from a distance, closer-range views of immediate surroundings also may be considered visual resources, as these views contribute to a neighborhood's local character. As such, the following provides a brief description of the general aesthetic character of the most prominent land use types within the City.

General Overview

The City of Fontana is a highly urbanized area, and includes residential, commercial, industrial, and open space uses. The City's overall community design reflects 20th-century suburban models characterized by separated land uses and limited connectivity. The highest concentration of development is within the central "City Core" area, which includes single- and multi-family dwelling units and numerous businesses located along Sierra Avenue, the main north-south corridor in the City.

Residential

Older residential areas and smaller subdivisions tucked between other land uses are designed with houses set back and facing the street. Older parts of the City consist of a modified grid pattern, including some cul-de-sacs with single-family and some multi-family buildings, typically with short setbacks from the sidewalk or street. Large-block residential developments created

through specific plans, starting in the 1980s, display the curved streets and cul-de-sac design of suburban-style development. Planned development areas are typically inward looking, with few connections to arterials. Developments along arterials in newer areas are usually walled or fenced, and the majority of single-family homes along main arterials have their back and side yards facing the arterial street.



Figure 5.1-2 South Fontana Homes Built in the 1980s

Commercial / Retail

Other than downtown Fontana, which has a few retail blocks with buildings built to the sidewalk, retail and commercial uses in the City can be characterized in four ways, discussed briefly below (City of Fontana, 2016). All four are designed with the car in mind, but the newer developments include sidewalks along streets and buildings, and substantial landscaping.

- **Stand-alone retail**: These are usually one story, with one or two curb cuts, and are surrounded by parking lots.
- **Older neighborhood centers**: These retail areas tend to be characterized by low-value strip commercial and stand-alone buildings set back from the street. A supermarket, drug store, or similar store often anchor these strip shopping centers, which have parking in front.
- **Newer retail clusters**: This development combines several retailers in one location, and is usually situated at an intersection and anchored by a gas station.
- **Large neighborhood centers/small regional centers**: This newer retail is organized into shopping centers with perimeter buildings located around parking. This type of commercial development is largely disconnected from residential areas, and is located near regional arterials, such as SR-210 or I-15.



Figure 5.1-3 Falcon Ridge Town Center, Fontana

Industrial and Spheres of Influence

Industrial development is located primarily along I-10 in the southern portion of the City, and in the western Sphere of Influence. Newer warehouse districts are characterized by very large boxes along well-landscaped streets. Industrial districts also include older areas with a variety of businesses, many focused on trucking (City of Fontana, 2016).



Figure 5.1-4 Modern Warehouses near the Target Distribution Center, Fontana

Open Space

Fontana's open space is a mix of foothills, utility corridors, and parks. Open space on foothills is located in the north of the City, at the base of the San Gabriel Mountains, and in the south in the Jurupa Hills. The nearby mountains are part of the Angeles and San Bernardino National Forests, and trailheads in their foothills connect to the Pacific Crest Trail (City of Fontana, 2016).



SOURCE: City of Fontana website: www.fontana.org

Figure 5.1-5 Village Park, Fontana

5.1.1.3 Light and Glare

Due to the Project area's urbanized character, lighting and glare are often found throughout the Project area. Sources of lighting include street lights; lighting associated with parking areas, storefronts, and signage; and lighting originating from interiors of structures (i.e., homes, offices) that can be seen from the exterior. Glare resulting from sunlight or artificial light can be produced by headlights at night, and reflection off signage, windows, and other shiny surfaces.

5.1.2 Thresholds of Significance

For the purposes of this analysis, implementation of the General Plan Update may have a potentially significant impact if it were to result in any of the following:

- Have a substantial adverse effect on a scenic vista
- Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway
- Substantially degrade the existing visual character or quality of the site and its surroundings
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area

It should be noted that this analysis is conducted as part of the Program EIR for the General Plan Update. Therefore, site-specific, case-by-case analyses of project impacts to visual resources shall be completed as specific development is proposed in the future.

5.1.3 Environmental Impacts

Would the Project have a substantial adverse effect on a scenic vista?

The northern and southern portions of the City have direct lines of sight to the San Gabriel Mountains and the Jurupa Hills, respectively (considered scenic resources for this analysis). Since these areas of the City are closest in proximity to the San Gabriel Mountains and the Jurupa Hills, a potentially significant impact could occur if viewsheds to these scenic resources were obscured by development.

In the north and south of the city, master planned communities developed through the specific plan process since the 1980s are not expected to experience substantial land use changes over the next 20 years, as these areas are built out. Therefore, viewsheds in these areas will be largely unaffected by the implementation of the proposed General Plan Update, since few deviations in land use patterns are proposed in these areas. Proposed changes include enhancing connections to local destinations (e.g., parks, schools, retail centers) through safe pedestrian and bicycle routes, as well as walking trails (see Table 5.1-1, below). Such changes would be implemented at ground level and, therefore, would not interrupt views of the scenic resources to the north and south (namely, the mountains and hills). In addition, open spaces in these areas would be preserved, thereby eliminating the potential for structural development to obscure viewsheds (only structures related to the management of resources would be permitted).

The construction of connection routes and trails in the northern and southern portions of the City would be governed by the land use regulations and development standards in the specific plans. Furthermore, as presented in Table 5.1-1 below, General Plan Update land use goals, policies, and actions will ensure that: 1) land use pattern changes will be consistent with the Strategic Policy Map and the Future Land Use Map; 2) existing open space resources will be

preserved; and 3) future connections within existing master-planned neighborhoods will provide enhanced opportunities to access local amenities.

Therefore, with compliance with identified goals, policies, and actions of the General Plan Update and applicable regulations outlined in specific plans, implementation of development associated with the General Plan Update will result in a less than significant impact on scenic vistas.

As presented in Table 5.1-1 below, General Plan Update goals, policies, and actions applicable to the preservation of existing master planned neighborhoods and the provision of neighborhood connections include the following:

Table 5.1-1 General Plan Update Goals, Policies, and Actions Applicable to Neighborhood Preservation and Connections

Goals & Policies	Actions
Community & Neighborhoods	
Goal 4: Traditional and master-planned neighborhoods of single-family houses continue to thrive and attract family households.	
• Continue to support existing traditional and master-planned neighborhoods with excellent City services.	A. Provide safe walking and biking conditions within traditional neighborhoods and in connections to citywide pedestrian and bicycle routes. B. Use the Active Transportation Plan to identify "walk-sheds" of ½-mile radius and "bike-sheds" of 3-mile radius for safe and comfortable pedestrian and bicycle routes to schools, parks, and shopping areas.
Land Use, Zoning, and Urban Design	
Goal 2: Fontana development patterns support a high quality of life and economic prosperity.	
• Preserve and enhance stable residential neighborhoods. • Preserve land to achieve an interconnected network of environmentally sensitive areas, parks, multi-use paths, and recreation areas.	A. Preserve, protect, and connect existing master-planned neighborhoods. B. Recognize and respect that the established design patterns of many of Fontana's existing neighborhoods are unique and different from policies for new and future neighborhoods. C. Create "Connected Neighborhood" planning districts that link established master planned neighborhoods to each other and to nearby school, park, and shopping destinations with walking and biking routes.

Would the Project substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?

As previously stated, there are no officially designated scenic highways within or adjacent to the Project area. Nonetheless, the General Plan Update proposes goals, policies, and actions relative to trees and historic buildings (no rock outcropping exist within the City). The Conservation, Open Space, Parks and Trails Element (Chapter 7 of the General Plan Update) proposes policies and actions to support tree conservation and planting, and expand the City's tree canopy, in order to preserve and expand the city's urban forest with drought-resistant trees. Additionally, this Element proposes the development of a Tree and Shade Master Plan, which would provide best management practices to enhance resilience of City trees during high heat levels. Refer to Table 5.1-2, below, for the goals, policies, and actions proposed in the General Plan Update specifically related to the protection, inventorying, and planting of trees as part of a robust forestry plan for Fontana's urban desert environment.

Table 5.1-2 General Plan Update Goals, Policies, and Actions Applicable to Trees

Goals & Policies	Actions
Conservation, Open Space, Parks and Trails	
Goal 3: Fontana has a healthy, drought-resistant urban forest.	
• Support tree conservation and planting that enhances shade and drought resistance. • Expand Fontana's tree canopy.	A. Preserve and expand the city's urban forest with drought resistant trees. B. Inventory the city's urban forest, using volunteers if needed, and estimate the size of the tree canopy. C. Perform a cost-benefit analysis for Fontana's trees. D. Review the Fontana Tree Policy Manual regularly and update it to incorporate new best practices. E. Develop a Tree and Shade Plan for the long-term benefit of Fontana. F. Expand the tree canopy in Fontana to 25% cover. G. Create connected networks of shaded corridors. H. Prioritize expansion of street trees as part of the revitalization effort for downtown and adjacent neighborhoods. I. Create a tree donation program for public parks and other public spaces. J. Plant fruit-bearing trees in order to create community orchards.

With regard to historic resources, there are three individual National Register of Historical Places (NRHP) sites, one California Register of Historical Landmarks site, and at least 12 California Points of Historical Interest in the City of Fontana. The Community & Neighborhoods Element (Chapter 4 of the General Plan Update) outlines specific goals, policies, and actions for the preservation and adaptive re-use of historic resources (Table 5.1-3).

Table 5.1-3 General Plan Update Goals, Policies, and Actions Applicable to Historic Resources

Goals & Policies	Actions
Community & Neighborhoods	
Goal 1: The integrity and character of historic structures, cultural resources sites and overall historic character of the City of Fontana are maintained and enhanced.	
• Coordinate City programs and policies to support preservation goals. • Support and promote community-based historic preservation initiatives. • Designate local historic landmarks. • Provide appropriate tools to review changes that may detract from historic integrity and character.	A. Designate a staff person in the Planning Division with responsibility for historic and cultural resource issues and as a liaison to the Fontana Historical Society. B. Establish and maintain a thorough inventory of historic sites to be kept in the Planning Division and at the Historical Society. C. Review the Historic Resources Inventory prepared in the 1990s and other resources to develop an authoritative listing. D. Create a ranking system and priority list to identify the most important historic sites in Fontana to ensure that these sites are protected by Article XIII of the Fontana Code. E. Seek assistance in reviewing and completing the Historic Resources Inventory, creating a priority list, and researching and preparing any sites to submit for listing. F. Adopt incentives to encourage and streamline adaptive reuse of the most important historic structures.

As there is no officially designated or eligible scenic highways within or adjacent to the Project area, implementation of the General Plan Update will result in a less than significant impact to scenic resources within a state scenic highway. Moreover, compliance with identified goals, policies, and actions of the General Plan Update, and applicable state and local regulations, will result in a less than significant impact on scenic resources in the Project area.

Would the Project substantially degrade the existing visual character or quality of the site and its surroundings?

As discussed in Section 5.1.1.2, the Project area is an urbanized, largely built-out area that includes residential, commercial, industrial, and open space uses. The overall community design of Fontana currently reflects its development history and a strong reliance on planned development models for large residential communities, shopping centers, and the warehouse industry. As such, in accordance with the Land Use, Zoning, and Urban Design Element of the General Plan Update, future development within the City would largely consist of infill development and redevelopment of previously built sites to accommodate new growth, as well as annexation of land within the Sphere of Influence to improve entrance corridors. In addition, the Community and Neighborhoods Element and Downtown Area Plan identify the need to redevelop older neighborhoods; provide more compact, walkable, mixed-use developments with new housing and shopping opportunities; and revitalize the central core of the City. The ultimate design of these new developments could have a potentially significant impact on visual character or quality of the Project area and its surroundings.

A guiding principle contained within the Land Use, Zoning, and Urban Design Element of the General Plan Update is to pursue high-quality development by making public investments a model of excellent design and maintain high-quality design standards for new development. As such, the proposed goals, policies, and actions in the General Plan Update embrace urban design as a cornerstone of infill, redevelopment, and new construction. More specifically, the Land Use Element, Community and Neighborhoods Element, and Downtown Area Plan delineate the nature and extent of new development types within the City, and provide actionable guidance with regard to the ways in which urban design can shape the aesthetic character of new development.

The following discusses proposed land use changes, and how those changes could impact visual character and quality of the Project area. Following this discussion is Table 5.1-4, which presents applicable goals, policies, and actions relating to visual character).

Infill development in central Fontana is a prominent strategy in the General Plan Update, and several policies encourage the revitalization and redevelopment of downtown and older neighborhoods in the central core. To that end, the General Plan Update proposes two new land use categories that could potentially impact the visual character of the central core and surrounding areas. The Walkable Mixed-Use Downtown and Corridors (WMXU-1) and Walkable Mixed Use Urban Village (WMXU-2) would allow development to occur in the City's downtown area and on vacant underutilized lots in adjacent areas. The general character of WMXU-1 and WMXU-2 is described below:

WMXU-1: WMXU-1 would allow a combination of commercial development and multi-family housing that could be "vertical" (housing or offices above ground-floor commercial development) or "horizontal" (housing and commercial uses are located adjacent to one another). WMXU-1 residential densities would range from 24 to 39 dwelling units per acre and

non-residential uses would have a maximum Floor Area Ratio (FAR) of 2.0. Light industrial uses within WMXU-1 would be prohibited, other than conditional allowances of small-scale, artisan-style businesses having no adverse urban design and other impacts (i.e., heavy truck traffic) on neighboring uses.

WMXU-2: New housing subdivisions under WMXU-2 would provide for a mixture of housing densities and types (multi-family, townhouses, single-family houses) with appropriate transitions between each. WMXU-2 also would provide for neighborhood-serving retail, open space, and civic uses. The WMXU-2 category is intended to enhance walking opportunities to shopping, schools, and parks within or outside of the subdivision. Residential densities would range from 12 to 24 dwelling units per acre, and non-residential uses would have a maximum FAR of 1.0.

The Land Use, Zoning, and Urban Design Element indicates that zoning associated with WMXU-1 should include design requirements for a compatible mixture of uses and densities in this area, and should ensure that a proper transition in density occurs adjacent to streets with single-family houses. Under WMXU-2, site design would facilitate multi-modal connectivity internal to the site and external to connect with adjacent areas. For example, each subdivision would use design strategies rather than walls to connect to streets and adjacent development. Moreover, form-based zoning would be applied to the WMXU categories, thereby guiding the design of the physical form the developments will take (i.e., relationship between building facades and public places like sidewalks, streets and plazas; the form and mass of buildings in relation to one another; and the scale and types of streets and blocks).

In addition to the City's central core/downtown area, the General Plan Update encourages the creation of compact and walkable urban village-style design in new developments. For example, additional development or redevelopment along the City's major corridors (e.g., Foothill and Valley Boulevards and Sierra Avenue) would involve construction of multi-family housing and mixed-use development where vacant and underutilized land currently exists. Mixed-use subdivisions are proposed to be built in areas with vacant land, providing a variety of housing types and a mix of retail and service areas. Furthermore, transit-oriented development is proposed in several areas with the potential for annexation. These areas include Arrow Boulevard west of downtown; the small residential area bounded by San Bernardino, Locust, Randall, and Alder Avenues; and an area along Foothill Boulevard between Almeria and Hemlock.

Infill, redevelopment, and new construction as described above would alter the visual character in areas in which that development would occur. However, the Land Use, Zoning, and Urban Design Element provides specific strategies and recommendations to ensure that urban design applied to new and existing development would be visually appealing and compatible with existing development, and would enhance connectivity throughout the City. While the visual character could change substantially with implementation of the General Plan Update (e.g., infill development where no structures currently exist; new mixed-use development on underutilized land), such changes are more likely to be considered a beneficial aesthetic

impact and an improvement to the views within the Project area, rather than an adverse impact.

As discussed previously, few significant changes are expected in the land use patterns in north and south of the City, and any changes will continue to be governed by the land use regulations and development standards in the specific plans for these areas. No changes are proposed to open space uses in the City.

Table 5.1-4, below, presents the General Plan Update goals, policies, and actions applicable to visual character.

Table 5.1-4 General Plan Update Goals, Policies, and Actions Applicable to Visual Character

Goals & Policies	Actions
Community & Neighborhoods	
Goal 5: New housing developments are organized as walkable villages linked to citywide destinations.	
• Support regulations that promote creation of compact and walkable urban village-style design in new developments.	A. Develop regulations for new developments through Area Plans and in PUDs that promote efficient, walkable neighborhoods with access to amenities and city destinations. B. Create walkability and connectivity performance standards for new housing developments. C. Encourage mixed-use amenities as anchors to walkable neighborhoods and corridors, particularly within a ½-mile radius of planned Bus Rapid Transit stops. D. Locate neighborhood-serving businesses within walking and biking distance of a significant percentage of units in new subdivisions and housing developments.
Goal 6: The safe, attractive, and lively central part of the city has new infill development and infrastructure and public realm improvements.	
• Support revitalization of the central area of the city with an integrated approach including mixed-use development, infill housing, infrastructure improvements, interconnections, and placemaking programs.	A. Create a committee focused on the central area of the city to meet regularly about strategy to implement the Downtown Area Plan (in Chapter 14) and other developments and improvements in that part of the city. B. Implement the Downtown Area Plan. (Refer to Chapter 14.) C. Establish a Downtown Management District and hire a Downtown Manager to promote public and private investment, as well as programming, and to implement the Downtown Area Plan.

Table 5.1-4 General Plan Update Goals, Policies, and Actions Applicable to Visual Character

Goals & Policies	Actions
	D. Establish a Downtown District Committee of property owners, business owners, and residents to work with the Downtown Manager. E. Explore the organizational structure of the Main Street America Program as a model for Fontana's Downtown District Committee (www.mainstreet. org) F. Promote education, arts and culture as part of the Downtown Area Plan. G. Enhance existing arts and culture options (the Art Depot, the theater and the new amphitheater for example) with new entertainment options and supporting housing and businesses, such as restaurants. H. Establish a program of public realm and infrastructure improvements for neighborhoods in the central are of the city. I. Engage residents, students, members of faith based communities, and other volunteers to perform rapid "neighborhood audits" of the public realm in the central area of the city to aid in targeting and prioritizing resources for public improvements. J. Review and prioritize audit results for inclusion in the improvements program for the i3 neighborhoods and publish the results of the audit and review. K. Amend commercial zoning along the Sierra Avenue, Foothill Boulevard, and Valley Boulevard corridors to be consistent with updated land use categories to promote more compact, mixed-use and walkable commercial districts. L. Use the zoning tools prepared for the Downtown Code prepared with the Downtown Area Plan to designate intersections and segments of corridors currently zoned for commercial development to change to mixed-use development including housing, especially at planned transit stops.

Table 5.1-4 General Plan Update Goals, Policies, and Actions Applicable to Visual Character

Goals & Policies	Actions
Downtown Area Plan	
Goal 4: Reinvigorate the Foothill and Sierra corridors with a mix of retail, employment, mixed-use and housing development as an economic engine for the downtown area, and as gateways to downtown.	
• Ensure that future street improvements for Foothill and Arrow Boulevards and Sierra Avenue improve the appearance and pedestrian environment while accommodating traffic flows. • In addition to high-quality commercial development, encourage housing in appropriate forms along these corridors. • Concentrate higher development intensities within a 1/2 mile of planned transit stops, with shared parking arrangements when feasible.	A. Prepare, adopt and implement updated zoning and design guidance for the Gateway Corridors to help ensure that infill development contributes to the new Downtown Gateway character of these key corridor segments. B. Prepare a Foothill Boulevard plan that includes a new four-lane Downtown Gateway segment with enhanced pedestrian facilities and landscaping, extending approximately one mile east and west of Sierra Avenue.
Land Use, Zoning, and Urban Design	
Goal 7: Public and private development meets high design standards.	
• Support high-quality development in design standards and in land use decisions.	A. Make it a priority to hire a planner with urban design training and expertise when an opportunity for new staff arises. B. Ensure that public and private developments are attractive, comfortable, and welcoming by following the urban design principles in Chapter 14, Downtown Area Plan. C. Design new housing in walkable neighborhoods that are connected to adjoining neighborhoods. D. Design new neighborhoods by integrating them into existing street grids. E. Establish transitions in scale and density from surrounding areas. F. Ensure that parks or playgrounds are located within safe walking distance of residences (1/4 mile to 1/2 mile). G. Establish safe connections between neighborhoods and schools. H. Expand active transportation options by providing new pedestrian and bicycle connections to and from neighborhoods to nearby commercial or activity centers. I. Design streets to include accessible, attractive, and comfortable pedestrian ways.

Table 5.1-4 General Plan Update Goals, Policies, and Actions Applicable to Visual Character

Goals & Policies	Actions
Goal 3: Update the City zoning code to ensure its compatibility with the General Plan.	
• Support zoning changes that promote implementation of the Plan.	A. Adopt the Downtown Code prepared in conjunction with the Downtown Area Plan. B. Create corridor zoning for the Walkable Mixed Use-1-Downtown and Corridors land use category using the Downtown Code as a foundation. C. Create zoning for the Walkable Mixed Use -2-Urban Village land use category. D. Revise and amend zoning for the Regional Mixed-Use land use category.

In conclusion, policies and actions included in the Land Use, Zoning, and Urban Design Element, the Community and Neighborhoods Element, and the Downtown Area Plan are consistent with the principles and goals stated in the General Plan Update for those chapters. Additionally, urban design that will shape the character of new construction for infill, redevelopment, and new development would be guided by the policies and actions in the General Plan Update, as well as the City's Zoning and Development Code, which is required to be consistent with the City's General Plan (City of Fontana, 2017). Therefore, implementation of development allowed under the General Plan Update will have a less than significant impact on the existing visual character and quality of the Project area and its surroundings.

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

Development resulting from implementation of the General Plan Update would create new light sources in areas that were previously vacant or underutilized, and additional sources of light in previously developed areas in which infill or redevelopment occurred. New light sources are expected to be in the form of exterior building and signage illumination, street lighting, lighting associated with new transit shelters, and security lighting in parks and on trails. The light associated with increased vehicle traffic (i.e., headlights) in areas that were previously vacant also could be a new source of light and glare. These new sources of light and glare could have a potential impact on existing residential areas of the City.

Given the City's urbanized character and associated light and glare sources that currently exist, and given that the proposed development would largely be located adjacent to existing development with light and glare sources, development under the General Plan Update would represent a continuation of existing lighting conditions that would be substantially similar to existing conditions. Additionally, since lighting is considered important for a sense of security and safety, the installation of lighting in parks and transit shelters, and the addition of lighting on

neighborhood streets, could be considered a beneficial amenity, rather than an adverse impact. Goals, policies, and actions included in the General Plan Update encourage the addition of light sources in places such as parks and trails for security purposes.

Future development in the City would be required to comply with existing City regulations relative to light and glare to address light and glare impacts to adjacent properties. Section 30.326 of the Fontana Municipal Code requires low-level security lighting for all multiple-family residential common parking areas, and for all other uses anticipated to have night-time activity. In addition, all lights must be directed and shielded to prevent light and glare from spilling over onto adjacent properties (thereby avoiding an adverse effect), and lighting design must be compatible with the architectural style of related buildings (City of Fontana, 2017).

With compliance with the Fontana Municipal Code, implementation of development under the General Plan Update would result in less than significant impacts of light and glare on day and nighttime views.

5.1.4 Mitigation Measures

While no significant aesthetics impacts have been identified that require mitigation to less than significant levels, the following mitigation measures are considered as best practices to be applied to future projects, as necessary, to reduce impacts to less than significant levels. The following list of mitigation measures is not all inclusive of mitigation measures that may be adopted for future projects but serve as a guide and performance standards that constitute the minimum level of measures to reduce environmental impacts to acceptable levels.

MM-AES-1 For future development associated with the project located in or adjacent to residentially zoned property, the following General Condition of Approval shall be imposed: Construction documents shall include language that requires all construction contractors to strictly control the staging of construction equipment and the cleanliness of construction equipment stored or driven beyond the limits of the construction work area. Construction equipment shall be parked and staged within the project site to the extent practical. Staging areas shall be screened from view from residential properties with solid wood fencing or green fence. Construction worker parking may be located off-site with approval of the City; however, on-street parking of construction worker vehicles on residential streets shall be prohibited. Vehicles shall be kept clean and free of mud and dust before leaving the project site. Surrounding streets shall be swept daily and maintained free of dirt and debris.

5.1.5 References

California Department of Transportation (CALTRANS), 2018. California Scenic Highway System. Updated September 9, 2011. Accessed February 21, 2018: http://www.dot.ca.gov/design/lap/livability/scenic-highways/

City of Fontana, 2018. Code of Ordinances. Online content updated on October 25, 2017 (Supplement 42). Accessed on February 26, 2018: https://library.municode.com/ca/fontana.

City of Fontana, 2016. Fontana General Plan Update Background Report. Prepared by Stantec Consulting Services, Inc. for the City of Fontana, California. April.

5.2 AIR QUALITY

This section analyzes potential air quality impacts that could result from implementation of the proposed General Plan Update. Implementation of the General Plan Update would influence future development that could potentially result in criteria pollutant and toxic contaminant emissions. This chapter provides information on what levels of emissions are anticipated to be generated as a result of implementation of the General Plan Update. However, since the project would not directly result in emissions, the General Plan Updates are analyzed primarily in terms of consistency with the 2016 Air Quality Management Plan (AQMP) to determine impacts on region-wide emissions, as well as how implementing projects pursuant to the General Plan would be analyzed individually to determine potentially substantial impacts.

5.2.1 Environmental Setting

The City of Fontana is located within the South Coast Air Basin (Basin) which is a semi-arid Mediterranean climate characterized by mild winters and summers. Although the climate of the Basin is characterized as semi-arid, the air near the land surface is quite moist on most days because of the presence of a marine layer. Fontana is located at an elevation of approximately 1,700 feet above mean sea level (msl) in the northern portion of the valley and 1,000 feet msl in the southern portion. Due to the City's location, periods of heavy early morning fog and low status clouds are common. Annual average temperatures throughout the Basin vary from the low to middle 60s (degrees Farenheit). The monthly average minimum temperature recorded ranged from 44.0°F in January (coolest month of the year) to 62.9°F in August (warmest month of the year), with an annual average minimum of 52.3°F.

The annual rainfall in the Basin typically occurs between November and April. Average monthly rainfall during that period varied from 3.65 inches in January to 0.26 inch or less from May to October, with an annual total of 15.32 inches. Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather. The coastal location of the Basin also creates a wind pattern that blows offshore at night and onshore during the day, so that air pollutants formed in the heat of the day tend to stay inland. Major coastal cities with high population density and heavy vehicular traffic, combined with the climate and geographical configuration, influence air quality throughout the Basin.

5.2.1.1 Regional Air Quality

As stated above, the applicable region for the City of Fontana is the Basin, which is approximately 6,700-square miles in total and includes portions of Los Angeles, Riverside, and San Bernardino Counties, and all of Orange County. It is bound by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Basin is managed by the South Coast Air Quality Management District (SCAQMD) who is responsible for bringing air quality in areas under its jurisdiction into conformity with federal and state air quality standards. SCAQMD works with federal, State, and local agencies to reduce pollutant emissions from stationary, mobile, and indirect pollutant sources through the development of rules and regulations.

Both California and the federal government have established health-based ambient air quality standards (AAQS) for seven air pollutants (known as criteria pollutants). These pollutants are ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), inhalable particulate matter with a diameter of 10 microns or less (PM_{10}), fine particulate matter with a diameter of 2.5 microns or less ($PM_{2.5}$), and lead (Pb). The State has also established AAQS for the additional pollutants of visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. The AAQS are designed to protect the health and welfare of the populace within a reasonable margin of safety. Where State and federal standards differ, State AAQS are more stringent than federal AAQS. Federal and State standards are shown in Table 5.2-1 (Ambient Air Quality Standards). Descriptions of each criteria pollutant are provided below.

Ozone

Ozone is a pungent, colorless, and highly reactive gas that forms from the atmospheric reaction of organic gases with nitrogen oxides in the presence of sunlight. Ozone is most commonly associated with smog. Ozone precursors such as reactive organic gases (ROG) and oxides of nitrogen (NO_X) are released from mobile and stationary sources. Ozone is a respiratory irritant and can cause cardiovascular diseases, eye irritation, and impaired cardiopulmonary function. Ozone also causes damage to building materials and plant leafs.

Carbon Monoxide

Carbon monoxide is primarily emitted from vehicles due to the incomplete combustion of fuels. Carbon monoxide has wide ranging impacts on human health because it combines with hemoglobin in the body and reduces the amount of oxygen transported in the bloodstream. Carbon monoxide can result in reduced tolerance for exercise, impairment of mental function, impairment of fetal development, headaches, nausea, and death at high levels of exposure.

Reactive Organic Gases (ROG) and Volatile Organic Compounds (VOC)

Hydrocarbons are organic gases that are formed solely of hydrogen and carbon. There are several subsets of organic gases, including Volatile Organic Compounds (VOCs) and Reactive Organic Gases (ROGs), which include all hydrocarbons except those exempted by ARB. Therefore, ROGs are a set of organic gases based on state rules and regulations. VOCs are similar to ROGs in that they include all organic gases except those exempted by Federal law.

Both VOCs and ROGs are emitted from incomplete combustion of hydrocarbons or other carbon- based fuels. Combustion engine exhaust, oil refineries, and oil-fueled power plants are the primary sources of hydrocarbons. Another source of hydrocarbons is evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

The primary health effects related to hydrocarbons stem from ozone (see discussion above). High levels of hydrocarbons in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. There are no separate national or California ambient air quality standards for ROG. Carcinogenic forms of ROG, such as benzene, are also considered toxic air contaminants (TACs).

Nitrogen Dioxide and Nitrogen Oxides (NO_X)

Nitrogen dioxide and other oxides of nitrogen (NO_X) contribute to the formation of smog and results in the brownish haze associated with it. They are primarily emitted from motor vehicle exhaust but can be omitted from other high-temperature stationary sources. Nitrogen oxides can aggravate respiratory illnesses, reduce visibility, impair plant growth, and form acid rain.

Particulate Matter

Particulate matter is a complex mixture of small-suspended particles and liquid droplets in the air. Particulate matter between ten microns and 2.5 microns is known as PM_{10}, also known as coarse or inhalable particulate matter. PM_{10} is emitted from diverse sources including road dust, diesel soot, combustion products, abrasion of tires and brakes, construction operations, and windstorms. PM_{10} can also be formed secondarily in the atmosphere when NO_2 and SO_2 react with ammonia. Particulate matter less than 2.5 microns in size are called $PM_{2.5}$ or fine particulate matter. $PM_{2.5}$ is primarily emitted from point sources such as power plants, industrial facilities, automobiles, wood-burning fireplaces, and construction sites. Particulate matter is deposited in the lungs and cause permanent lung damage, potentially resulting in lung disease and respiratory symptoms like asthma and bronchitis. Particulate matter has also been linked to cardiovascular problems such as arrhythmia and heart attacks. Particulate matter can also interfere with the body's ability to clear the respiratory tract and can act as a carrier of absorbed toxic substances. Particulate matter causes welfare issues because it scatters light and reduces visibility, causes environmental damage such as increasing the acidity of lakes and streams, and can stain and damage stone, such as that applied in statues and monuments.

Sulfur Dioxide

Sulfur dioxide and other oxides of sulfur (SO_X) are reactive gasses emitted from the burning of fossil fuels, primarily from power plants and other industrial facilities (USEPA). Other less impacting sources include metal extraction activities, locomotives, large ships, and off-road equipment. Human health impacts associated with SO_X emissions include bronchoconstriction and increased asthma symptoms.

Hydrogen Sulfide (H_2S)

Hydrogen Sulfide (H_2S) is a colorless gas with the odor of rotten eggs. Hydrogen sulfide occurs naturally and is also produced by human activities. Hydrogen sulfide (H_2S) occurs naturally in crude petroleum, natural gas, volcanic gases, and hot springs. It can also result during bacterial decomposition of sulfur-containing organic substances. Emissions of H_2S associated with human activities including various industrial activities, such as oil and gas production, refining, sewage treatment plants, food processing, and confined animal feeding operations.

Studies in humans suggest that the respiratory tract and nervous system are the most sensitive targets of hydrogen sulfide toxicity. Exposure to low concentrations of hydrogen sulfide may cause irritation to the eyes, nose, or throat. It may also cause difficulty in breathing for some asthmatics. Respiratory distress or arrest has been observed in people exposed to very high concentrations of hydrogen sulfide. Exposure to low concentrations of hydrogen sulfide may cause headaches, poor memory, tiredness, and balance problems. Brief exposures to high concentrations of hydrogen sulfide can cause loss of consciousness. In most cases, the person appears to regain consciousness without any other effects. However, in some individuals, there may be permanent or long-term effects such as headaches, poor attention span, poor memory, and poor motor function. Hydrogen sulfide is extremely hazardous in high concentrations; especially in enclosed spaces

Lead

Lead is primarily emitted from metal processing facilities (i.e. secondary lead smelters) and other sources such as manufacturers of batteries, paints, ink, ceramics, and ammunition. Historically, automobiles were the primary sources before lead was phased out of gasoline. The health effects of exposure to lead include gastrointestinal disturbances, anemia, kidney diseases, and potential neuromuscular and neurologic dysfunction. Lead is also classified as a probable human carcinogen.

Odors

Typically, odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from the psychological (i.e. irritation, anger, or anxiety) to the physiological, including circulatory and respiratory effects, nausea, vomiting, and headache.

The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor and in fact an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). It is important to also note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word strong to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

Neither the state nor the federal governments have adopted rules or regulations for the control of odor sources. The SCAQMD does not have an individual rule or regulation that specifically addresses odors; however, odors would be subject to SCAQMD's Rule 402 Public Nuisance and the California Health and Safety Code Section 41700 (SCAQMD 1976; State of California 1975). Any actions related to odors would be based on citizen complaints to local governments and the SCAQMD.

Table 5.2-1 Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3.5]	Secondary[3.6]	Method[7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.07 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		-		
Fine	24 Hour	No Separate State Standard		35 µg/m^3	Same as Primary	Inertial Separation
Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3.5]	Secondary[3.6]	Method[7]
Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	15 µg/m^3	Standard	and Gravimetric Analysis
Carbon Monoxide (CO)	8 Hour	9 ppm (10 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/ m^3)		35 ppm (40 mg/m^3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/ m^3)		-	-	-

Table 5.2-1 Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3.5]	Secondary[3.6]	Method[7]
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.03 ppm (57 µg/m^3)	Gas Phase Chemiluminescence	53 ppb (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m^3)		100 ppb (see footnote 8)	None	
Sulfur Dioxide (SO_2)	24 Hour	0.04 ppm (105 µg/m^3)	Ultraviolet Fluorescence	-	-	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	-		-	0.5 ppm (1,300 µg/m^3)	
	1 Hour	0.25 ppm (655 µg/m^3)		75 ppb (196 µg/m^3)	-	-
Lead[9] (Pb)	30 Day Average	1.5 µg/m^3	Atomic Absorption	-	-	-
	Calendar Quarter	-		1.5 µg/m^3	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average[10]	-		0.15 µg/m^3		
Visibility Reducing Particles	8 Hour	See footnote 12	Beta Attenuation and Transmittance through Filter Tape	No Federal Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[9]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

Table 5.2-1 Ambient Air Quality Standards

SOURCE: California Air Quality Resources Board: https://www.arb.ca.gov/research/aaqs/aaqs2.pdf

NOTES:

PPM, parts per million

µg/m3, micrograms per cubic meter

California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM_{10}, $PM_{2.5}$, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight-hour concentration 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. Contact U.S. EPA for further clarification and current federal policies.

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

Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

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

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

Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010). Note that EPA standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.

Table 5.2-1 Ambient Air Quality Standards

On June 2, 2010, the US EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations. EPA also proposed a new automated Federal Reference Method (FRM) using ultraviolet technology, but will retain the older pararosaniline methods until the new FRM has adequately permeated State monitoring networks. The EPA also revoked both the existing 24-hour SO_2 standard of 0.14 ppm and the annual primary SO_2 standard of 0.030 ppm, effective August 23, 2010. The secondary SO_2 standard was not revised at that time; however, the secondary standard is undergoing separate review by EPA. Note that the new standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

The ARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

National lead standard, rolling 3-month average: final rule signed October 15, 2008.

Extinction coefficient of 0.23 per kilometer visibility of ten miles or more (0.07 – 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent.

Non-Attainment Status

Air pollution levels are measured at monitoring stations located throughout the Basin. A "non-attainment area" does not meet the standard and is subject to a State Implementation Plan to attain the standard. Table 5.2-2 (South Coast Air Basin Attainment Status) summarizes the attainment status in the Basin for the criteria pollutants. The Basin is currently in nonattainment status for ozone (O_3) and fine and inhalable particulate matter ($PM_{2.5}$ and PM_{10}). No areas of the Basin exceeded federal or state standards for NO_2, SO_2, CO, sulfates, or lead.

Table 5.2-2 South Coast Air Basin Attainment Status

Criteria Pollutant	State Designation	Federal Designation
Ozone – 1 hour standard	Non-attainment	Not applicable
Ozone – 8 hour standard	Non-attainment	Non-attainment (extreme)
PM_{10}	Non-attainment	Attainment (maintenance)
$PM_{2.5}$	Non-attainment	Non-attainment (serious)
Carbon Monoxide	Attainment	Attainment (maintenance)
Nitrogen Dioxide	Attainment	Attainment (maintenance)
Sulfur Dioxide	Attainment	Attainment
Lead[1]	Attainment	Non-attainment (partial)
SOURCE: SCAQMD: http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp		

5.2.1.2 Local Air Quality

The primary sources of air pollution in the City of Fontana include: electric utilities using nonrenewable resources; transportation; buildings; manufacturing processes; natural disasters (e.g., wildfires); and climate change. Since 2000, fine particulate pollution has been reduced by about 50 percent and levels of ground-level ozone, (summertime smog), have been reduced by about 35 percent (General Plan, 2017). Nevertheless, ozone and fine particulate levels are among the highest in the U.S., partially because of geography. Winds from the west push smog toward San Bernardino and Riverside counties, where the mountains contain it. To meet federal standards for ground-level ozone, emissions of a key pollutant, nitrogen oxides, will have to be further reduced by about two-thirds.

Fontana is located in the South Coast air monitoring and source receptor area. Relative to the General Plan Update, the nearest long-term air quality monitoring site for Carbon Monoxide (CO), Ozone (O_3), Nitrogen Dioxide (NO_2), Particulate Matter ≤ 10 Microns (PM_{10}), and Ultra-Fine Particulates ($PM_{2.5}$) was obtained from the Fontana-Arrow Highway monitoring station (SRA 34), located within the City of Fontana near the corner of Arrow Route and Almond Avenue (Latitude: 34° 06' 0", Longitude: 117° 29' 31"). Table 5.2-3 and 5.2-4 presents a three-year background of criteria pollutants monitored at the Fontana-Arrow Highway monitoring station and identifies the number of days ambient air quality standards were exceeded as reported by the California Resources Board (ARB 2018).

[1] Applicable only to Los Angeles County

Table 5.2-3 2014-2016 Local Air Quality

Monitoring Station	CO	O_3 (PPM)		NO_2 (PPM)		SO_2 (PPM)		PM_{10} (µg/m³)		$PM_{2.5}$ (µg/m³)		Pb (µg/m³)		$S0_4$ (µg/m³)
	Max 8-hr	Max 1-hr	Max 8-hr	Max 1-hr	AAM	Max 24-hr		Max 24-hr	AAM	Max 24-hr	AAM	Max Month	Max Qtr	Max 24-hr
Fontana-Arrow Highway														
2016	--	0.139	0.105	71.7	--	--	--	94.0	--	58.8	--	--	--	--
2015	--	0.133	0.111	89.1	--	--	--	96.0	--	50.5	--	--	--	--
2014	--	0.127	0.106	70.4	--	--	--	68.0	--	34.9	--	--	--	--
SOURCE: ARB 2014-2016														
NOTES: -- = pollutant not monitored; PPM = parts per million; µg/m³ = micrograms per cubic meter; AAM = annual arithmetic mean														

Table 5.2-4 2012-2014 Air Quality Standards Exceedance

Monitoring Station	O_3 (PPM)			PM_{10} ($\mu g/m^3$)		$PM_{2.5}$ ($\mu g/m^3$)		NO_2 (PPM)	
	Fed* 8-hr	State 1-hr	State 8-hr	Fed 24-hr	State 24-hr	Fed^ 24-hr	State	Fed	State
Fontana Arrow Highway									
2016	49	3	52	--	--	3.2	11	--	--
2015	57	3	59	--	13	10.4	12	--	--
2014	52	1	52	--	10	--	12	--	--
SOURCE: ARB 2014-2016									
NOTES: -- pollutant not monitored; * 0.070 ppm; ^35 µg/m3									

Sensitive Receptors

Sensitive receptors include individuals or groups of people that are more susceptible to the effects of air pollution than the population at large, and are therefore given special consideration when evaluation air quality impacts. Sensitive receptors include children, the elderly, individuals with pre-existing respiratory or cardiovascular illness, as well as athletes and others who engage in frequent exercise. Land uses associated with sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Pollutants of particular concern when relating to sensitive receptors include carbon monoxide, toxic air contaminants, and odors. The City currently has numerous sensitive land uses, in particular residences, schools, health care facilities, and playgrounds. These sensitive land uses will continue to exist and new sensitive land uses will be established pursuant to General Plan Update policies.

Toxic Emission Sources

According to the CARB, 70 identified toxic air emitters operate within the planning area and require reporting of air toxic emissions data pursuant to the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987, Connelly; CARB, 2017). Various warehouses and industrial plants (e.g., steel, metals, fiberglass, asphalt) are located throughout the City (SCAQMD, 2017). These land uses may generate high volumes of truck traffic resulting in diesel-particulate matter emissions, an identified toxic air contaminant.

Local Transportation

Regional access to the City of Fontana is provided through I-10 and SR-210 freeways connecting east-west communities, and I-15 freeway connecting north-south communities. An Illustration of the City's Circulation Master Plan of Roadways is provided in Section 5.14. According to the City's General Plan Circulation Element, the existing average daily traffic (ADT) on Sierra Avenue

north of I-10 is currently over capacity; additional freeway interchanges and grade separations are needed across the I-10 freeway and the Union Pacific Railroad tracks.

In California, traffic level of service (LOS) is designated "A" through "F" with LOS "A" representing free flow conditions and LOS "F" representing conditions that exceed the theoretical capacity of the roadway, which is an indicator of high levels of traffic congestion. The City strives to maintain conditions of LOS "C" or better while recognizing that certain constraints, such as right-of-way limitations and the necessary balancing of needs for all users means that LOS "C" is not always feasible to achieve. A Traffic Analysis was completed for the proposed General Plan Update as detailed in Section 5.13. The Traffic Analysis determined that 11 roadway segments are currently exceeding LOS "C", with three at LOS "D" and eight at LOS "E" (Stantec 2017). As detailed in Section 5.13, the following mitigation measure has been identified to reduce potentially significant impacts to traffic and the transportation network to a less than significant level. The location with recommended future improvements could be monitored over time, with improvements implemented when the LOS exceeds the performance standard.

MM 5.14-1: To mitigate the impact of additional traffic volumes on the segment of Citrus Avenue between Foothill Boulevard and Arrow Boulevard, roadway modifications to provide sidewalks where currently missing, the addition of Class II bicycle lanes in accordance with the City's ATP, and additional traffic calming measures as necessary to reduce traffic volumes to a level appropriate for the roadway's designation as a Secondary Highway will be constructed. Additionally, the roadway could be modified by removing on-street parking and constructing raised medians to increase the roadway's vehicular capacity.

The City utilizes a development impact fee, paid by new development as it occurs in the City, to fund projects such as the above mitigation measure.

Local Emissions

Local emissions are defined by area source emissions, energy demand emissions, and mobile source emissions. Area source emissions are the combination of many small emissions sources that include use of outdoor landscape maintenance equipment, use of consumer products such as cleaning products, and use of architectural coatings in the construction and maintenance of developments. Energy demand emissions result from use of electricity and natural gas. Mobile source emissions will result from automobile, truck, and other vehicle sources associated with build out of the General Plan Update. Refer to Section 5.1.4 for discussion regarding emissions in relation to the General Plan Update.

Odors

The SCAQMD has identified land uses subject to odor complaints. These land uses include agriculture (farming and livestock), wastewater treatment, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding (SCAQMD, 1993). Refer to Section 5.1.4 for discussion regarding odors in relation to the General Plan Update.

5.2.2 Planning and Regulatory Framework

Clean Air Act

The federal Clean Air Act (CAA) defines the U.S. Environmental Protection Agency's (EPA) responsibilities for protecting and improving the United States air quality and ozone layer (USEPA). Key components of the CAA include reducing ambient concentrations of air pollutants that cause health and aesthetic problems, reducing emission of toxic air pollutants, and stopping production and use of chemicals that destroy the ozone.

Federal clean air laws require areas with unhealthy levels of ozone, inhalable particulate matter, carbon monoxide, nitrogen dioxide, and sulfur dioxide to develop State Implementation Plans (SIPs). SIPs are comprehensive documents that identify how an area will attain National Ambient Air Quality Standards (NAAQS). Deadlines for attainment were established in the 1990 amendments to the CAA based on the severity of an area's air pollution problem. Failure to meet air quality deadlines can result in sanctions against the state or the EPA taking over enforcement of the CAA in the affected area. SIPs are a compilation of new and previously submitted plans, programs, district rules, and state and federal regulations. The SCAQMD implements the required provisions of an applicable SIP through its AQMPs and updates. Currently, SCAQMD implements the 8-hr Ozone and $PM_{2.5}$ SIP in the 2007 AQMP and the PM_{10} SIP in the 2003 AQMP. The $PM_{2.5}$ SIP is currently being revised by SCAQMD in response to partial disapproval by the EPA.

California Clean Air Act

The California Clean Air Act (CCAA) of 1988 was enacted to develop plans and strategies for attaining California Ambient Air Quality Standards (CAAQS). The California Air Resources Board (ARB), which is part of the California Environmental Protection Agency (Cal-EPA), develops statewide air quality regulations, including industry-specific limits on criteria, toxic, and nuisance pollutants. The CCAA is more stringent than federal law in a number of ways including revised standards for PM_{10} and ozone and State for visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride.

Toxic Hotspots

State requirements specifically address air toxics issues through Assembly Bill (AB) 1807 (known as the Tanner Bill) that established the State air toxics program and the *Air Toxics Hot Spots Information and Assessment Act* (AB 2588). The air quality regulations developed from these bills have been modified to incorporate the federal regulations associated with the Federal *Clean Air Act Amendments* of 1990. The *Air Toxics Hot Spots Information and Assessment Act (Hot Spots Act)* was enacted in September 1987. Under this bill, stationary sources of emissions are required to report the types and quantities of certain substances that their facilities routinely release into the air. The ARB has a Hotspots Analysis and Reporting Program (HARP)[2] which is a software suite

[2] https://www.arb.ca.gov/toxics/harp/harp.htm

that addresses the programmatic requirements of the *Hot Spots Act.* HARP can be used to promote statewide consistency, efficiency and cost-effective development of facility emission inventories and conducting health risk assessments.

The SCAQMD is required to prepare an annual report on the status and forecast of air toxic hotspots pursuant to Section 44363 of the California Health and Safety Code. SCAQMD monitors facilities that are not exempt from the fee and reporting requirements of AB2588.

Some facilities are covered under umbrella permits that address industry-wide categories. SCAQMD has issued general permits for the following seven activities:

- Retail gasoline dispensing
- Perchloroethylene dry cleaning
- Auto body shops
- Fiberglass molding
- Printing
- Metal plating
- Wood stripping and finishing

Emissions inventories and risk assessment guidelines have been prepared for the seven industry-wide categories. Approximately 1,400 auto body shops, 3,200 gasoline stations, and 1,400 perchloroethylene dry cleaners within the District are covered under these umbrella permits; 70 identified toxic air emitters operate within the City of Fontana planning area according to the CARB (CARB, 2017). Depending on the severity of the facilities' TAC releases, SCAQMD requires either public notification of toxic hot spots or preparation of a risk reduction plan, as follows:

	Cancer Risk (per million)	**Acute Risk**	**Chronic Risk**
Action Risk Level	>= 25	>= 3.0	>= 3.0
Public Notification	>= 10	>= 1.0	>= 1.0
Exempt	<1	<0.1	<0.1

Air Quality Management Plan

Under State law, SCAQMD is required to prepare an overall plan for air quality improvement, known as the Air Quality Management Plan. The purpose of an AQMP is to bring an air basin into compliance with federal and State air quality standards and is a multi-tiered document that builds on previously adopted AQMPs (SCAQMD). On March 3, 2017, the South Coast Air Quality Management District adopted the 2016 Air Quality Management Plan for the South Coast Air Basin and Coachella Valley (2016 AQMP).

The 2016 AQMP includes both stationary and mobile source strategies to ensure that attainment deadlines are met, that public health is protected to the maximum extent feasible, and that the region is not faced with sanctions if the Plan is not approved or if the national ambient air quality standards (NAAQS) are not met on time. These strategies are to be implemented in partnership with the California Air Resources Board (CARB) and U.S. EPA. In addition, the Southern California Association of Governments (SCAG) recently approved their 2016 Regional Transportation Plan/Sustainable Communities Strategies[3] (RTP/SCS) that includes transportation programs, measures, and strategies generally designed to reduce vehicle miles traveled. While these measures are primarily intended to affect road congestion and transportation choices, they can also help achieve substantial measurable reductions in emissions that are incorporated into the 2016 AQMP.

The 2016 AQMP is organized into five primary components:

1. Traditional regulatory measures
2. Incentive-based programs
3. Co-benefits from existing GHG reduction programs
4. Further deployment of cleaner technologies
5. Reductions from State and federal mobile sources

The 2016 AQMP indicates that 522 tons per day (tpd) of total Basin NO_X 2012 emissions are projected to drop to 255 tpd and 214 tpd in the 8-hour ozone attainment years of 2023 and 2031 respectively, due to continued implementation of already adopted regulatory actions ("baseline emissions"). The analysis suggests that total Basin emissions of NO_X must be reduced to approximately 141 tpd in 2023 and 96 tpd in 2031 to attain the 8-hour ozone standards. This represents an additional 45 percent reduction in NO_X in 2023, and an additional 55 percent NO_X reduction beyond 2031 levels.

The 2016 AQMP also demonstrates that the 24-hour $PM_{2.5}$ standard will be met by the 2019 attainment year with no additional reductions needed beyond already adopted measures. Therefore, no additional measures are necessary for this standard. The annual $PM_{2.5}$ standard, however, cannot be met by 2021 by implementing all feasible measures, which is the attainment

[3] http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx

year for our current "moderate" nonattainment area classification. As a "serious" nonattainment area, four more years are provided to attain the annual $PM_{2.5}$ standard by 2025.

Stationary source control measures in the 2016 AQMP are based on continued implementation of previously adopted regulations which will lead to NO_X emission reductions of 68 percent by 2023 and 80 percent by 2031. Examples of stationary source reductions include 12 tpd from RECLAIM facilities, 4.1 tpd from Rule 1147 sources, 3.2 tpd from Rule 1110, 1146, and 1146.1 sources and 3 tpd from the implementation of Rule 1111. With the addition of 2016 AQMP proposed regulatory measures, a 30 percent reduction of NO_X from stationary sources is expected in the 15 year period between 2008 and 2023. This is in addition to significant NO_X reductions from stationary sources achieved in the decades prior to 2008. This Plan builds upon these past successes with new regulatory commitments for additional emissions reductions to the same extent as past AQMPs.

Mobile sources contributed about 88 percent of the region's total NO_X emissions in 2012. Since the SCAQMD has limited authority to regulate mobile sources, CARB and U.S. EPA, which have primary authority over mobile sources, were engaged in the development of the 2016 AQMP to ensure mobile sources perform their fair share of pollution reduction responsibilities. In May 2016, CARB released an updated Mobile Source Strategy[4] and a Proposed State SIP Strategy[5] supporting multiple planning efforts to meet air quality standards, greenhouse gas (GHG) emission reduction targets, petroleum consumption reduction, and reduced health risks from transportation emissions over the next 15 years. Specifically, the mobile source strategy outlines a coordinated suite of measure concepts for on-road light- and heavy-duty vehicles, off-road equipment, as well as federal and international sources. The strategy also provides regulatory and programmatic mechanisms to implement the measures and estimated NO_X reductions for the South Coast Air Basin. A subset of the statewide strategy is a mobile source strategy for the South Coast SIP. The reductions from these mobile source measures are included in the attainment demonstration and are critical for meeting the standards.

SCAQMD Rule Book

To control air pollution in the Basins, SCAQMD adopts rules that establish permissible air pollutant emissions and governs a variety of businesses, processes, operations, and products to implement the AQMP and the various federal and State air quality requirements. SCAQMD does not adopt rules for mobile sources; those are established by ARB or U.S. EPA. Rules that will be applicable during buildout of the proposed General Plan Updates include Rule 402 (Nuisance), Rule 403 (Fugitive Dust), Rule 1108 (Cutback Asphalt) and Rule 1113 (Architectural Coatings). Rule 402 prohibits discharges of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. Rule 403 prohibits emissions of fugitive dust from any grading activity, storage pile, or other disturbed surface area

[4] https://www.arb.ca.gov/planning/sip/2016sip/2016mobsrc.htm
[5] https://www.arb.ca.gov/planning/sip/2016sip/2016sip.htm

if it crosses the project property line or if emissions caused by vehicle movement cause substantial impairment of visibility (defined as exceeding 20 percent opacity in the air). Rule 403 requires the implementation of Best Available Control Measures (BACM) and includes additional provisions for projects disturbing more than five acres and those disturbing more than fifty acres. Rule 1108 restricts the sale or use of any cutback asphalt containing more than 0.5 percent by volume organic compounds. Rule 1113 establishes maximum concentrations of VOCs in paints and other applications and establishes the thresholds for low-VOC coatings.

5.2.3 Thresholds of Significance

For the purposes of this analysis, implementation of the General Plan Update could result in potentially significant impacts to air quality if they would:

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

B. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

C. Result in a cumulatively considerable net increase of any criteria pollutant that the region is nonattainment under an applicable federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).

D. Expose sensitive receptors to substantial pollutant concentrations.

E. Create objectionable odors affecting a substantial number of people.

Implementation of the General Plan Update would influence future development that could potentially result in criteria pollutant and toxic contaminant emissions. Background information is provided below on the existing land uses and change in land use as a consequence of implementation of the General Plan Update. However, since the project would not directly result in emissions, the General Plan Update is analyzed primarily in terms of consistency with the AQMP to determine impacts on region-wide emissions, as well as how implementing projects pursuant to the General Plan would be analyzed individually to determine potentially substantial impacts.

Implementing projects would be screened to determine if maximum daily criteria pollutant emissions from construction and operation are individually and/or cumulatively significant. To determine this, the SCAQMD significance thresholds would be used. These thresholds are identified in Table 5.2-5 (SCAQMD Maximum Daily Emissions Thresholds [lbs/day]). Cumulative impacts are typically determined by analyzing vehicle miles traveled, long-term pollutant reductions, or average vehicle ridership, depending on the use.

Table 5.2-5 SCAQMD Maximum Daily Emissions Thresholds (lbs/days)

Pollutant	Construction	Operation
VOC/ROG	75	55
NO_X	100	55
CO	550	550
SO_2	150	150
PM_{10}	150	150
$PM_{2.5}$	55	55
Lead	3	3
SOURCE: MIG 2015		
NOTE: Volatile organic compounds are measured as reactive organic gases		

5.2.4 Environmental Impacts

Would the Project conflict with or obstruct implementation of the applicable air quality plan?

A significant impact could occur if the General Plan Update conflicts with or obstructs the implementation of the 2016 AQMP, which could result in decreasing efforts to meet attainment deadlines for criteria pollutants and maintaining existing compliance with applicable air quality standards. As a policy document, no development is authorized or would directly occur from the adoption of the General Plan Update. However, development can be expected to occur within the planning area guided by General Plan policies, as detailed below.

Pursuant to the methodology provided in Chapter 12 of the 1993 SCAQMD CEQA Air Quality Handbook, consistency with the 2016 AQMP is affirmed when a project: (1) does not increase the frequency or severity of an air quality standards violation or cause a new violation and (2) is consistent with the growth assumptions in the AQMP(SCAQMD). These criteria are discussed below.

Criterion 1

Air quality modelling is typically undertaken to determine if a specific project could cause a violation of any air quality standard either regionally or locally. However, given that the proposed General Plan Update represents a programmatic proposal and would not direclty result in construction of any development or infrastructure, such analysis has not been conducted as part of this environmental impact analysis. As noted, future developments that result from buildout of the General Plan Update would be subject to CEQA. To determine if the proposed General Plan Updates could potentially contribute or cause a new air quality violation by exceeding applicable ambient air quality standards, consistency with the growth projections used in the AQMP is appropriate, as discussed in criterion 2 below.

Criterion 2

Due to the changes in proposed land uses from the existing General Plan (upon which the 2016 AQMP is partially based), and potential future development supported by implementation of the General Plan Update, the General Plan Update may not be consistent with the growth projections utilized in the 2016 AQMP. This could result in potentially significant impacts because air quality attainment goals could be delayed since the strategies adopted in the AQMP would not account for land use changes in the planning area.

The 2016 AQMP long-term emissions inventory is based on the growth and land use projections included in SCAG's 2016 RTP/SCS. According to the RTP/SCS, by 2040, the City of Fontana is projected to have a population of 280,900 (SCAG, 2016). With implementation of the General Plan Update, the City of Fontana planning area is estimated to grow to a total population of 315,852 (Stantec 2017). This is an approximately 12% increase compared to the population forecast assumed in the RTP/SCS and has the potential to be inconsistent with the 2016 AQMP. However, the land use modifications and policies proposed as part of the General Plan Update would result in an approximately 19% reduction in per capita vehicle miles traveled compared to 2040 buildout of the existing General Plan. Despite the projected population growth (including employment) associated with the General Plan Update, daily total vehicle miles traveled within the planning area would be reduced from 12,880,405 to 11,679,397, or an approximately 9% reduction.

Table 5.2-6 General Plan Buildout 2040 Conditions Summary

Projected Component	Regional Transportation Plan/ Sustainable Communities Strategy	Current General Plan	Proposed General Plan (with Applied Goals & Policies)
Population	280,900	281,339	315,852
Employment	70,800	90,054	99,129
Daily Total Trips	n/a	935,523	n/a
Daily Total VMT	n/a	12,880,405	11,679,397
Daily VMT per Capita[1]	n/a	34.7	28.1
SOURCE: Stantec Consulting Traffic Impact Study (2017)			
NOTE: 1. Per Capita estimate based on Service Population (Residential Population plus Employment Population) 2. VMT = vehicle miles traveled.			

The emissions inventory in the 2016 AQMP demonstrates that mobile source vehicle emissions represents the single largest category and approximately 56% of all emissions in the SCAB. As a result, the 9% reduction in daily total vehicle miles traveled under buildout for the General Plan Update would have a substantial reduction in mobile source vehicle emissions which are the single largest contributor of criteria air pollutants in the SCAB.

While implementation of the General Plan Update would result in projected population growth that exceeds the population estimates considered in the RTP/SCS, a considerable reduction of per capita (25%) and total (9%) criteria air pollutant emissions would occur compared to existing conditions. These emissions reductions would occur as a result of the proposed land use modifications and policies that would substantially decrease vehicle miles travelled within the City. The reduction in emissions from General Plan Update implementation would be achieved despite the projected population growth. The population estimates in the RTP/SCS are used in support of estimating baseline emissions inventories for and consistency with SCAQMD's AQMP. Because the projected population growth would result in considerably fewer emissions than those considered for the City of Fontana population in the SCAQMD's AQMP, implementation of the General Plan Update would be consistent with the AQMP and impacts would be less than significant.

Would the Project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Short-Term Emissions

Air quality impacts (i.e., short-term construction-related criteria pollutant emissions) may occur during site preparation and construction activiites required to construct the proposed land uses outlined in the General Plan Update. This includes emissions from use of construction equipment, worker, vendor, and hauling trips, application of architectural coatings, asphalt off-gas, and disturbance of on-site soils (fugitive dust).

The proposed General Plan Update includes the following land use designations: residential, commercial, industrial, mixed-use, public, and open space. A break-down of these is provided in the Project Description (Section 3.0). As stated in Section 3.0, the proposed General Plan Update has the potential to result in 33,454 acres of land use compared to 33,428 acres of land use from the current 2003 General Plan. Overall, this represents a negligible difference (0.07%). Some building demolition and construction would be expected to occur as a result of land use modifications included in the General Plan Update such as changing some commercial land uses to walkable mixed use land uses. These construction activities would not all occur simultaneously, but would rather be spread over the General Plan Update's 20-year build-out schedule (the City would not be built out simultaneously).

Pursuant to existing CEQA requirements, short-term, project-specific construction-related emissions will be analyzed as development proposals are submitted. Mitigation will be applied, where necessary, and typically includes requirements for use of low-VOC paints, installation of diesel particulate filters on older construction equipment, and limitations on hauling distances and or daily trips. Refer to Section 5.2.5 for a list of example mitigation measures.

Long-Term Emissions

Long-term criteria air pollutant emissions would result from the operation of potential development consistent with the General Plan Update. Operational emissions would result from vehicles, point sources, and area sources associated with development and General Plan Update buildout. The proposed land use modifications also have the potential to result in changes to the levels of long-term area and energy use emissions occurring from the land uses. Area emissions refer to emissions occurring from hearths, consumer products, area architectural coatings, and landscaping equipment. Energy use emissions refer to emissions occurring from building electricity and non-hearth natural gas usage.

To evaluate potential long-term increases in air emissions as a result of the proposed land use modifications associated with the General Plan Update, land use-specific emissions factors for area, energy, and mobile sources were estimated using the California Emissions Estimator Model 2016.3.1 (CalEEMod) and applied to the land use acreages in the existing General Plan and proposed General Plan Update. The total land use acreages of the existing General Plan and proposed General Plan Update are shown in Table 5.2-7 and the estimated land use-specific emissions factors are summarized in Table 5.2-8. The land use-specific and total difference in long-term criteria air pollutant emissions from implementation of the proposed General Plan (including those from the projected 9% reduction in vehicle miles traveled as a result of implementing the proposed General Plan Update goals and policies) compared to the existing General Plan are shown in Tables 5.2-9 and 5.2-10. CalEEMod output files are included in Appendix C.

Table 5.2-7 Land Use Comparison Between 2003 General Plan and Proposed General Plan Update

Land Use	2003 General Plan (acres)	Proposed General Plan Update (acres)	Difference (acres)
Residential	15,723	15,474	-249
Commercial	2,425	1,170	-1,255
Industrial	8,149	8,526	377
Public	3,710	3,328	-382
Open Space	0	30	30
Mixed Use	1,075	2,564	1,489

Table 5.2-8 Long-Term Criteria Air Pollutant Emissions by Land Use

Land Use	Area & Energy Long-Term Operation Phase Emissions (pounds/day/acre)						Mobile Long-Term Operation Phase Emissions (pounds/day/acre)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Residential	4.38	0.42	9.02	0.02	1.17	1.17	0.25	1.59	3.04	0.01	0.76	0.21
Commercial	0.96	0.04	0.03	0.00	0.00	0.00	1.20	7.59	14.41	0.05	3.58	0.99
Industrial	1.00	0.38	0.32	0.00	0.03	0.03	0.82	5.37	11.10	0.04	2.86	0.79
Public	0.77	1.08	0.91	0.01	0.08	0.08	6.58	38.11	55.37	0.19	11.86	3.28
Open Space	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.33	0.58	0.00	0.14	0.04
Mixed Use	1.51	0.12	1.93	0.00	0.25	0.25	2.34	13.67	20.49	0.07	4.48	1.24

SOURCE: California Emissions Estimator Model, See Appendix C

NOTES:

a. "Residential" includes a combination of Single Family Residence, Condos/ Townhomes, and Low Rise Apartment subtypes
b. "Commercial" includes Office Park
c. "Industrial" includes both General Heavy Industrial and General Light Industrial land uses.
d. "Public" includes Government Office Building, Parking Lot, and Restaurants
e. "Open Space" includes a combination of Education, Commercial, and Recreation land uses.
f. "Mixed Use" includes a combination of Residential (Townhomes/ Condos subtype), Commercial (General Office Building subtype), and Retail (Strip Mall subtype)

Table 5.2-9 Difference in Long-Term Criteria Air Pollutant Emissions from Proposed General Plan Update Compared to 2003 General Plan

Land Use	Area & Energy Emissions Sources (pounds/day)						Mobile Emissions Sources (pounds/day)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Residential	-1091.59	-103.68	-2,246.20	-5.07	-292.56	-292.56	-62.77	-396.56	-755.76	-2.64	-188.12	-51.89
Commercial	-1,210.70	-47.44	-41.16	-2.51	-5.77	-5.77	-1,510.14	7.59	14.41	0.05	3.58	0.99
General Industrial	377.90	143.30	120.75	0.83	11.54	11.54	308.42	5.37	11.10	0.04	2.86	0.79
Public	-295.82	-413.19	-348.76	-2.48	-31.41	-31.41	-2,513.90	5.37	11.10	0.04	2.86	0.79
Open Space	0.07	0.00	0.00	0.00	0.00	0.00	1.58	5.37	11.10	0.04	2.86	0.79
Mixed Use	2,241.85	177.94	2,874.37	6.67	371.92	371.92	3,488.43	10.66	17.36	0.06	3.99	1.10
NET DIFFERENCE	21.72	-243.08	359.00	-2.56	53.72	53.72	-288.38	-362.20	-690.69	-2.41	-171.96	-47.43
NET DIFFERENCE WITH 9% VMT Reduction	21.72	-243.08	359.00	-2.56	53.72	53.72	-3,643.39	-2,219.28	-4,229.94	-14.77	-1,052.92	-290.44

NOTE:
A negative value indicates the Proposed General Plan Update would have lesser emissions than those projected in the 2003 General Plan.
A positive value indicates the Proposed General Plan Update would have greater emissions than those projected in the 2003 General Plan.
9% reduction in vehicle miles traveled subtracted from 2003 General Plan buildout projections for mobile source emissions.
VMT = vehicle miles traveled.

Table 5.2-10 Total Difference in Long-Term Criteria Air Pollutant Emissions from Proposed General Plan Update Compared to 2003 General Plan

Plan Component	Area, Energy, & Mobile Sources Emissions (pounds/day)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Proposed General Plan Update	-266.67	-605.28	-331.69	-4.97	-118.24	6.28
Proposed General Plan Update with 9% Reduction in VMT	-3,621.68	-2,462.36	-3,870.95	-17.33	-999.21	-236.73

Table 5.2-9 reflects a decrease in emissions with a decrease in land use acreage and an increase in emissions with an increase in land use acreage. The resulting difference in long-term criteria air pollutant emissions from the proposed General Plan Update compared to the 2003 General Plan shown in Table 5.2-10 demonstrate an estimated reduction in all criteria air pollutants with the exception of $PM_{2.5}$. However, the estimated increase of 6.28 pounds per day $PM_{2.5}$ emissions are below the applicable SCAQMD threshold of significance of 55 pounds per day. Table 5.2-10 also shows the substantial reduction in emissions associated with the reduction in vehicle miles traveled achieved by the proposed goals and policies of the General Plan Update.

The General Plan Update would therefore not violate any air quality standard or contribute substantially to an existing or projected air quality violation. Potential impacts would therefore be less than significant.

Impacts associated with the construction and operations of new development resulting from implementation of the proposed General Plan Update will be identified on a project-by-project basis, at which time mitigation would be adopted, if necessary. Refer to Section 5.2.5 for a list of example mitigation measures.

Would the Project result in a cumulatively considerable net increase of any criteria pollutant that the region is nonattainment under an applicable federal or State ambient air quality standard?

In accordance with the SCAQMD methodology, emissions that exceed the regional significance thresholds would cumulatively contribute to the nonattainment designations of the Basin. The Basin is currently in nonattainment status for O_3, $PM_{2.5}$ and PM_{10}. As shown in Table 5.2-10, there will be a reduction in long-term criteria air pollutant emissions from the proposed General Plan Update compared to the 2003 General Plan with the exception of $PM_{2.5}$. However, the estimated increase of 6.28 pounds per day $PM_{2.5}$ emissions are below the applicable SCAQMD threshold of significance of 55 pounds per day, and are not anticipated to result in a cumulatively considerable net increase. Potential impacts would therefore be less than significant.

The following policies in the General Plan Update support attainment of air quality goals through assessment and mitigation of future development projects and City operations in regards to construction and operational pollutants, vehicle miles traveled and trips generated, alternative transit systems, and use of alternative energy.

Table 5.2-11 General Plan Update Applicable Goals and Policies

Goals & Policies	Action
Land Use, Zoning, and Urban Design	
Goal 1: Use the Strategic Policy Map and the Future Land Use Map to guide land use decision making.	
• Review citywide land use strategies when considering changes in the land use map. • Keep zoning and other regulations up to date and consistent with the Future Land Use Map.	A. Use the Strategic Policy Map to guide land use policy for the next 20 years. B. Use the Future Land Use Map to designate land uses in the city. C. Consult the land use categories defined here when making land use decisions. I. Update zoning to make it consistent with the spirit and the letter of the Future Land Use Plan. M. Review zoning district requirements linked to existing land use categories and make modifications as necessary to be consistent with the General Plan.
Goal 2: Fontana development patterns support a high quality of life and economic prosperity.	
• Locate industrial uses where there is easy access to regional transportation routes. • Promote interconnected neighborhoods with appropriate transitions between lower-intensity and higher-intensity land uses.	G. Ensure that existing and future employment districts have appropriate land use, zoning, and urban design transitions to nearby neighborhoods. H. Create an Area Plan for the RMU land use area and adjacent commercial land south of I-15 in North Fontana. K. Use Planned Unit Developments (PUDs) for master planned development projects in the future, rather than specific plans, with zoning that is consistent with the spirit and the letter of this General Plan.
Goal 5: Fontana's industrial uses are concentrated in a few locations that have easy access to regional transportation routes.	
• Promote the Southwest Industrial Park and the I-10 corridor as preferred locations for industrial uses. • Maintain but do not expand existing heavy industrial land use areas in proximity to one another and to services for industrial uses • Avoid locating small areas of residential uses where they will be surrounded by intensive commercial or industrial uses.	A. Extend industrial land uses along I-10 as shown in the Future Land Use Map (Chapter 15, page 15.23). B. Direct new industrial development to SWIP in order to build out this area designated for industrial development.

Table 5.2-11 General Plan Update Applicable Goals and Policies

Goals & Policies	Action
Community Mobility and Circulation	
Goal 3: Local transit within the City of Fontana is a viable choice for residents, easily accessible and serving destinations throughout the city.	
• Maximize the accessibility, safety, convenience, and appeal of transit service and transit stops. • Promote concentrated development patterns in coordination with transit planning to maximize service efficiency and ridership.	A. Work with Omnitrans to improve service and expand service to underserved parts of Fontana. B. Use emerging technologies to expand and enhance traditional fixed route/fixed-schedule transit service to include on-demand transit ride-sharing services and similar improvements. D. Provide easy transit access to grocery stores, schools, health facilities, and other necessary destinations and services by public transportation. F. Promote extending transit service to major commercial areas and major parks and community centers north of SR-210 in order to serve groups who may not have access to a car such as retail workers, senior citizens, and youth. I. Ensure that public transportation facilities are fully accessible to people with disabilities.
Goal 4: Fontana's neighborhood streets maintain a residential character and support a range of transportation options	
• Balance neighborhood traffic circulation needs with the goal of creating walkable and bike friendly neighborhoods.	A. Minimize noticeable increases in traffic from new development within existing residential neighborhoods through traffic-mitigation measures.
Goal 7: The city of Fontana participates in shaping regional transportation policies to reduce traffic congestion and greenhouse gas emissions.	
• Lead and participate in initiatives to manage regional traffic. • Coordinate with regional agencies and Caltrans to participate in regional efforts to maintain transportation infrastructure in Fontana. • Participate in the efforts of the Southern California Association of Governments (SCAG) to coordinate transportation planning and services that support greenhouse gas reductions. • Participate in the efforts by Caltrans to reduce congestion and improve traffic flow on area freeways.	A. Use the City's annual Legislative Platform to define positions on regional and statewide transportation polices. B. Work with Metrolink and other regional transit providers to support efforts to expand the regional rail system to connect a greater number of Fontana residents and businesses with other cities and counties in Southern California. D. Support the adoption and use of technologies that reduce emissions from passenger and transit vehicles.

Table 5.2-11 General Plan Update Applicable Goals and Policies

Goals & Policies	Action
	E. Reduce greenhouse gas emissions associated with transportation by reducing vehicle miles traveled and per-mile emissions through use of vehicle technologies to meet the City's goals for greenhouse gas reductions by 2035. F. Complete a comprehensive Circulation Master Plan to include cross-sections consistent with the General Plan and the Active Transportation Plan.
Green Infrastructure Practices and Benefits	
Goal 6: Fontana has a stormwater drainage system that is environmentally and economically sustainable and compatible with regional one water one watershed standards.	
• Continue to implement the Water Quality Management Plan for stormwater management that incorporates low-impact and green infrastructure standards. • Promote natural drainage approaches (green infrastructure) and other alternative non-structural and structural best practices to manage and treat stormwater.	C. Promote simple green infrastructure retrofits for existing buildings and properties, such as rain barrels. G. Identify how green infrastructure will be maintained. Green infrastructure is much less capital-intensive than traditional "gray" infrastructure, but it requires maintenance.

Would the Project expose sensitive receptors to substantial pollutant concentrations?

Concentrations of Criteria Pollutants

The proposed General Plan Update would not authorize any specific construction; however, future development projects constructed pursuant to General Plan land use policies could potentially expose sensitive receptors to temporary, localized pollutant concentrations in excess of air quality standards, even if the broader region is in attainment. Examples include emissions of fugitive dust and vehicle and machinery exhaust during large scale grading activities and roadway construction. Under limited circumstances, large-scale construction activities could result in emissions of fugitive dust, nitrogen oxides, and other criteria pollutants that could exceed SCAQMD daily thresholds of significance and thereby could result in a significant impact. Emissions of fugitive dust near sensitive receptors are a primary concern because, unlike gaseous pollutants that quickly rise and affect the upper atmosphere, particulate matter tends to remain close to the ground.

Future development associated with buildout of the proposed General Plan would be required to prepare an air quality impact analysis for individual development projects where possible emissions could impact sensitive receptors. Such analyses would include project-specific mitigation measures, as appropriate. Refer to Section 5.2.5 for a list of example mitigation measures. As well, future construction activities will be subject to routine control measures as required by SCAQMD (Rules 402, 403, 1108, and 1113). It should be noted that SCAQMD

guidance indicates that analysis of localized criteria pollutant impacts is required; therefore, future construction projects would be assessed for localized criteria pollutant impacts on a case-by-case basis under the purview of the City.

According to the *Air Quality and Land Use Handbook*, ARB recommends that sensitive land uses not be located within 500 feet of highways or major arterials having average annual daily traffic (AADT) that exceeds 100,000 vehicles. This is due to the concentration of pollutants that accumulate in this proximity to freeways and other major arterials. As discussed in Section 5.13, there are no non-freeway roadways in the planning area that are projected to have an AADT that exceeds 100,000 vehicles; however, there are three major freeways in the planning area (I-10, I-15, and SR-210) that do exceed the 100,000 vehicles. Based on ARB guidelines, a significant impact could occur if the General Plan Updates would permit new residential or other sensitive uses within 500 feet of these highways. Today, residential land uses exist within 500 feet of these highways within the planning area. Also, there are a number of vacant parcels designated for residential land use within 500 feet of either freeway. However, under the proposed General Plan Update, there are no new residential or other sensitive uses proposed within 500 feet of the highway.

While implementation of the General Plan Update would result in an increase in population and employment compared to the existing General Plan, the proposed policies of the General Plan Update would result in substantial reductions in vehicle miles traveled and associated criteria air pollutant emissions as shown in Table 5.2-10. While this reduction would be expected to result in a decrease in mobile source emissions at the regional and planning level, it is possible that vehicle trips could increase at specific localized roadway intersections and create a carbon monoxide (CO) hotspot.

A CO hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. CO hotspots have the potential to violate state and federal CO standards at intersections, even if the broader Basin is in attainment for federal and state levels. In general, the California Department of Transportation Project-Level Carbon Monoxide Protocol recommend analysis of CO hotspots when a project increases the number of vehicles operating in cold start mode by more than two percent, increases traffic volumes by more than five percent, or worsens average traffic speeds. In addition, CO hotspots are typically associated with intersections with lower ratings of LOS, such as LOS E or F, which indicate high congestion and high amounts of idling vehicles that have the potential to generate a CO hotspot.

As shown in Table 5.13-5, the General Plan Update would not substantially degrade the existing Levels of Service at the most potentially affected intersections in the City. As a result, the General Plan Update would not be expected to create a CO hotspot or contribute to a substantial increase in existing CO concentrations at intersections with poor Levels of Service.

Pursuant to existing regulations, future development projects associated with buildout of the proposed General Plan Update will be screened and analyzed pursuant to the CO Protocol to determine if a CO hotspot may occur at congested intersections. Mitigation may be required, if necessary, to alleviate traffic congestion and minimize the hotspot potential. Other mitigation could include operational restrictions on future development. With screening and analysis of future projects pursuant to the CO Protocol, impacts related to carbon monoxide hotspots would be less than significant.

With the implementation of proposed General Plan Update policies and adherence to existing environmental regulations that require specific analysis of impacts of industrial projects on sensitive receptors, the General Plan Update would not expose sensitive receptors to substantial criteria air pollutant concentrations and potential impacts would be less than significant.

Toxic Air Contaminants

The proposed General Plan Update, if implemented, could result in the addition of 377 acres of new industrial land use compared to the current General Plan. However, as identified in the Land Use, Zoning, and Urban Design Element of the General Plan Update, the heaviest industrial land uses, which most commonly contribute to toxic air contaminants, are concentrated in the southwest corner of the City in areas designated for industrial development and away from sensitive receptors, such as residential areas. The City also has policies in place restricting the location of residences near heavy industrial areas. the General Plan Update would therefore not expose sensitive receptors to substantial toxic air contaminants. Impacts would be less than significant.

Would the Project create objectionable odors affecting a substantial number of people?

Odors

According to the CEQA Air Quality Handbook, land uses associated with odor complaints typically include: agricultural operations, wastewater treatment plants, landfills, and industrial operations (e.g., manufacturing uses that produce chemicals, paper, etc.). While odors do not present a health risk of themselves, they are often considered a nuisance by people who live, work, or otherwise are located near outdoor odor sources.

As stated above, the heaviest industrial land uses, which most commonly contribute to odors, are concentrated in the southwest corner of the City in areas designated for industrial development and away from sensitive receptors, such as residential areas. The City also has policies in place restricting the location of residences near heavy industrial areas.

With regards to future development that may arise with implementation of the General Plan Update, any future potential sources of odors would have to be considered in light of potential impacts to surrounding land uses. Pursuant to existing environmental regulations, projects would be evaluated on a case-by-case basis with regard to potential impacts related to odors. While

siting is the primary way to prevent exposure to odors, odors can also be mitigated in similar fashion to air pollutant emissions (i.e., filtering). Therefore, impacts related to odors would be less than significant with implementation of existing development review practices.

5.2.5 Mitigation Measures

While no significant air quality impacts have been identified that require mitigation to less than significant levels, the following mitigation measures are considered as best practices to be applied to future projects, as necessary. The following list of mitigation measures is not all inclusive of mitigation measures that may be adopted for future projects but serve as a guide and performance standards that constitute the minimum level of measures to reduce environmental impacts to acceptable levels.

MM-AQ-1 In order to reduce future project-related air pollutant emissions and promote sustainability through conservation of energy and other natural resources, building and site plan designs shall ensure the project energy efficiencies surpass (exceed) applicable (2016) California Title 24 Energy Efficiency Standards by a minimum of 5%. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the applicant/developer and reviewed and approved by the City of Fontana prior to the issuance of the first building permit.

MM-AQ-2 To reduce energy demand associated with potable water conveyance, future projects shall implement the following, as applicable:

- Landscaping palette emphasizing drought tolerant plants
- Use of water-efficient irrigation techniques

U.S. Environmental Protection Agency (EPA) Certified WaterSense equivalent faucets, high-efficiency toilets, and water-conserving shower heads

MM-AQ-3 Future projects shall comply with applicable provisions of state law, including the California Green Standards Code (Part 11 of Title 24 of the California Code of Regulations.

MM-AQ-4 The applicant/developer shall encourage its tenants to use alternative-fueled vehicles such as compressed natural gas vehicles, electric vehicles, or other alternative fuels by providing publicly available information from the Southern California Air Quality Management District (SCAQMD), California Air Resources Board (GARB), and U.S. Environmental Protection Agency (EPA) on alternative fuel technologies.

MM-AQ-5 To promote alternative fuels and help support "clean" truck fleets, the developer/successor-in-interest shall provide building occupants and businesses with information related to the Southern California Air Quality Management District's (SCAQMD) Carl Moyer Program or other state programs that restrict operations to "clean" trucks, such as 2007 or newer model year or 2010 compliant heavy-duty vehicles, and information about the health effects of

diesel particulates, the benefits of reduced idling time, California Air Resources Board regulations, and the importance of not parking in residential areas. If trucks older than 2007 model year would be used at the project site, the developer/successor-in-interest shall encourage tenants, through contract specifications, to apply in good-faith for funding for diesel truck replacement/retrofit through grant programs such as the Carl Moyer, Prop 18, VIP [On-Road Heavy Duty Voucher Incentive Program], HVIP [Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project], and SOON [Surplus Off-Road Opt-In for NO_X] funding programs, as identified on SCAQMD's website (http://www.aqmd.gov). Tenants would be required to use those funds, if awarded.

MM-AQ-6 The applicant/developer shall encourage its tenants to use water-based or low volatile organic compound (VOC) cleaning products by providing publicly available information from the Southern California Air Quality Management District (SCAQMD), California Air Resources Board (CARB}, and U.S. Environmental Protection Agency (EPA) on such cleaning products.

MM-AQ-7 All on-site forklifts shall be non-diesel and shall be powered by electricity, compressed natural gas, or propane if technically feasible.

MM-AQ-8 In the event that any off-site utility and/or infrastructure improvements are required as a direct result of future projects, construction of such off-site utility and infrastructure improvements shall not occur concurrently with the demolition, site preparation, and grading phases of project construction. This requirement shall be clearly noted on all applicable grading and/or building plans.

MM-AQ-9 All construction equipment shall be maintained in good operation condition so as to reduce emissions. The construction contractor shall ensure that all construction equipment is being properly serviced and maintained as per the manufacturer's specification. Maintenance records shall be available at the construction site for City of Fontana verification. The following additional measures, as determined applicable by the City Engineer, shall be included as conditions of the Grading Permit issuance:

- Provide temporary traffic controls such as a flag person, during all phases of construction to maintain smooth traffic flow.
- Provide dedicated turn lanes for movement of construction trucks and equipment on- and off-site.
- Reroute construction trucks away from congested streets or sensitive receptor areas.
- Appoint a construction relations officer to act as a community liaison concerning on-site construction activity including resolution of issues related to PM_{10} generation.
- Improve traffic flow by signal synchronization and ensure that all vehicles and equipment will be properly tuned and maintained according to manufacturers' specifications.
- Require the use of 2010 and newer diesel haul trucks (e.g., material delivery trucks and soil import/export). If the lead agency determines that 2010 model year or newer diesel trucks cannot be obtained the lead agency shall use trucks that meet EPA 2007 model year NO_X and PM emissions requirements.

- During project construction, all internal combustion engines/construction equipment operating on the project site shall meet EPA-Certified Tier 3 emissions standards, or higher according to the following:
  - January I, 2012, to December 31, 2014: All off-road diesel-powered construction equipment greater than 50 hp shall meet Tier 3 off-road emissions standards. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.
  - Post-January 1, 2015: All off-road diesel-powered construction equipment greater than 50 hp shall meet the Tie. 4 emission standards, where available. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved. by a Level 3 diesel emissions control strategy for similarly sized engine as defined by CARB regulations.
  - A copy of each unit's certified tier specification, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

MM-AQ-10 Prior to the issuance of any grading permits, all Applicants shall submit construction plans to the City of Fontana denoting the proposed schedule and projected equipment use. Construction contractors shall provide evidence that low emission mobile construction equipment will be utilized, or that their use was investigated and found to be infeasible for the project. Contractors shall also conform to any construction measures imposed by the SCAQMD as well as City Planning Staff.

MM-AQ-11 All paints and coatings shall meet or exceed performance standards noted in SCAQMD Rule 1113. Specifically, the following measures shall be implemented, as feasible:

- Use coatings and solvents with a VOC content lower than that required under AQMD Rule 1113.
- Construct or build with materials that do not require painting.
- Require the-use of pre-painted construction materials.

MM-AQ-12 Projects that result in the construction of more than 19 single-family residential units, 40 multifamily residential units, or 45,000 square feet of retail/commercial/industrial space shall be required to apply paints either by hand or high volume, low pressure (HVLP) spay. These measures may reduce volatile organic compounds (VOC) associated with the application of paints and coatings by an estimated 60 to 75 percent. Alternatively, the contractor may specify the use of low volatility paints and coatings. Several of currently available primers have VOC contents of less than 0.85 pounds per gallon (e.g., Dulux professional exterior primer 100 percent acrylic). Top coats can be less than 0.07 pounds per gallon (8 grams per liter) (e.g., Lifemaster 2000-series). This latter measure would reduce these VOC emissions by more than 70 percent.

Larger projects should incorporate both the use of HVLP or hand application and the requirement for low volatility coatings.

MM-AQ-13 All asphalt shall meet or exceed performance standards noted in SCAQMD Rule 1108.

MM-AQ-14 Prior to the issuance of grading permits or approval of grading plans for future development projects within the project area, future developments shall include a dust control plan as part of the construction contract standard specifications. The dust control plan shall include measures to meet the requirements of SCAQMD Rules 402 and 403. Such measures may include, but are not limited to, the following:

- Phase and schedule activities to avoid high-ozone days and first-stage smog alerts.
- Discontinue operation during second-stage smog alerts.
- All haul trucks shall be covered prior to leaving the site to prevent dust from impacting the surrounding areas.
- Comply with AQMD Rule 403, particularly to minimize fugitive dust and noise to surrounding areas.
- Moisten soil each day prior to commencing grading to depth of soil cut.
- Water exposed surfaces at least twice a day under calm conditions, and as often as needed on windy days or during very dry weather in order to maintain a surface crust and minimize the release of visible emissions from the construction site.
- Treat any area that will be exposed for extended periods with a soil conditioner to stabilize soil or temporarily plant with vegetation.
- Wash mud-covered tires and under carriages of trucks leaving construction sites.
- Provide for street sweeping, as needed, on adjacent roadways to remove dirt dropped by construction vehicles or mud, which would otherwise be carried off by trucks departing project sites.
- Securely cover all loads of fill coming to the site with a tight-fitting tarp.
- Cease grading during periods when winds exceed 25 miles per hour.
- Provide for permanent sealing of all graded areas, as applicable, at the earliest practicable time after soil disturbance.
- Use low-sulfur diesel fuel in all equipment.
- Use electric equipment whenever practicable.
- Shut off engines when not in use.

MM-AQ-15 All industrial and commercial facilities shall post signs requiring that trucks shall not be left idling for prolonged periods pursuant to Title 13 of the California Code of Regulations, Section 2485, which limits idle times to not more than five minutes.

MM-AQ-16 The City of Fontana shall require that both industrial and commercial uses designate preferential parking for vanpools.

MM-AQ-17 The proposed commercial and industrial areas shall incorporate food service.

MM-AQ-18 All industrial and commercial site tenants with 50 or more employees shall be required to post both bus and MetroLink schedules in conspicuous areas.

MM-AQ-19 All industrial and commercial site tenants with 50 or more employees shall be requested to configure their operating schedules around the MetroLink schedule to the extent reasonably feasible.

MM-AQ-20 All residential and commercial structures shall be required to incorporate high efficiency/low polluting heating, air conditioning, appliances, and water heaters.

MM-AQ-21 All residential and commercial structures shall be required to incorporate thermal pane windows and weather-stripping.

MM-AQ-22 All residential, commercial, and industrial structures shall be required to incorporate light colored roofing materials.

MM-AQ-23 Prior to approval of future development projects within the project area, the City of Fontana shall conduct project-level environmental review to determine potential vehicle emission impacts associated with the project(s). Mitigation measures shall be developed for each project as it is considered to mitigate potentially significant impacts to the extent feasible. Potential mitigation measures may require that facilities with over 250 employees (full or part-time employees at a worksite for a consecutive six-month period calculated as a monthly average), as required by the Air Quality Management Plan, implement Transportation Demand Management (TDM) programs.

MM-AQ-24 New warehouse facilities or distribution centers that generate a minimum of 100 truck trips per day, or 40 truck trips with transport refrigeration units (TRUs) per day, or TRU operations exceeding 300 hours per week shall not be located closer than 1,000 feet from any existing or proposed sensitive land use such as residential, a hospital, medical offices, day care facilities, and/or fire stations (pursuant to the recommendations set forth in the CARB Air Quality and Land Use Handbook), unless the increase in health risk for such sensitive receptors due to an individual project is shown to be less than the South Coast Air Quality Management District's thresholds of significance (Maximum Incremental Cancer Risk ≥10 in 1 million; Cancer Burden >0.5 excess cancer cases [in areas ≥1 in 1 million]; and Chronic & Acute Hazard Index ≥1.0 [project increment]). With regard to expansions/modifications of existing warehouse facilities or distribution centers, this mitigation measure shall be applied to the resulting incremental net increase in truck trips or TRU operations, and any resulting net increase in health risk impacts, as compared to those existing at the time an expansion/modification project is proposed.

5.2.6 References

California Air Resources Board. Air Quality Monitoring Network. Accessed on March 18, 2018: https://www.arb.ca.gov/aaqm/aaqm.htm.

City of Fontana Code of Ordinances. Online content updated on October 25, 2017 (Supplement 42). Accessed on February 26, 2018: https://library.municode.com/ca/fontana.

Draft Fontana Forward General Plan Update 2015-2035. City of Fontana, California. October 9, 2017.

Fontana General Plan Update Background Report, 2016. Prepared by Stantec Consulting Services, Inc. for the City of Fontana, California. April.

Fontana General Plan Update Traffic Analysis Report, 2017. Prepared by Stantec Consulting Services, Inc. for the City of Fontana, California. March.

South Coast Air Quality Management District, 2017. Annual Report on AB 2588 Air Toxics "Hot Spots" Program. Accessed on April 10, 2018: http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab2588_annual_report_2016.pdf

South Coast Air Quality Management District, 1993. CEQA Air Quality Handbook.

South Coast Air Quality Management District, 1976. Rule 402 (Public Nuisance). Accessed April 4, 2018: http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-402.pdf?sfvrsn=4

United States Environmental Protection Agency. Clean Air Act. Accessed on March 18, 2018: https://www.epa.gov/air/caa/.

Southern California Association of Governments, 2016. 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy

State of California. Health and Safety Code, 1975. Accessed on April 4, 2018: https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=41700.&lawCode=HSC

5.3 BIOLOGICAL RESOURCES

This section describes the biological resources that occur within the Planning Area, including vegetation communities; wildlife habitats and migration corridors; rare, threatened, endangered, or otherwise special status plant and animal species; and wetland and riparian habitats, and describes potential impacts and mitigation measures that may be implemented to reduce or eliminate impacts to those resources. The information and analyses presented in this section are based on research conducted in preparation for the previous General Plan environmental impact report (EIR) prepared in 2003 and a Fontana General Plan Update Habitat Assessment report prepared in August 2015 (Michael Baker International 2015; Appendix D). Because conditions within the Planning Area with respect to biological resources, particularly sensitive resources, have not changed significantly since these documents were prepared, the information provided in them is sufficient for analysis of impacts related to this General Plan Update.

5.3.1 Environmental Setting

The City of Fontana (City) is located on a desert valley floor between the San Gabriel Mountains to the north and the Jurupa Hills to the south. Elevations range from approximately 2,700 feet above mean sea level (msl) to 850 feet msl, with the Planning Area generally sloping to the southwest. The City is a highly-urbanized area comprised of residential, commercial, agricultural and industrial uses, as well as supporting public uses. To the north of the City limits is the City's Sphere of Influence (SOI) and the San Bernardino National Forest; to the west are unincorporated SOI lands and the City of Rancho Cucamonga; to the south is unincorporated Riverside County and Jurupa Valley, which contain considerable residential development; and to the east are the City of Rialto and SOI lands. The highest concentration of development is within the central "Downtown" area, which contains a large amount of single and multiple family dwelling units with numerous commercial business located along Sierra Avenue, the main north-south corridor in the City. The northern portion of the City and the northern SOI are largely undeveloped with some agricultural use and scattered residential development.

5.3.2 Existing Conditions

5.3.2.1 Climate

San Bernardino County is characterized by warm, dry summers and cool winters. The City is frequently subject to the hot, dry Santa Ana winds as air travels from the Mojave Desert to the east through the Cajon Pass of the San Gabriel Mountains. Average temperatures range from low of 44.0°F in January to a high of 95.0°F in July. Precipitation is infrequent, measuring an average of 14.77 inches, with the majority falling from November through April (Intellicast, 2018).

5.3.2.2 Flora and Fauna

Because the City of Fontana is generally highly urbanized, the majority of the City's biological resources occur at its outskirts, in areas free from large-scale development. Within the City, these areas include the foothills of the San Gabriel Mountains to the north and the Jurupa Hills to the south.

Vegetation Communities

Biological surveys conducted in support of the General Plan Update have identified eight different plant communities occurring in the City that range from disturbed and ornamental plant communities in the developed portions of the City to more diverse, native plant communities, mainly in the northern and southern portions of the Planning Area. Many of the native vegetation communities within the City limits and its SOI have undergone considerable modification during the past 100 years. At the turn of the century, much of the area was used for agricultural production, primarily vineyards and orchards. Over the last several decades, these agricultural areas have been replaced by residential communities, industrial, and commercial developments. A brief summary of each natural community identified within the limits of the City of Fontana is discussed below.

Developed/Disturbed

Although most of the land within the City limits supported coastal sage and alluvial communities at one time, much of the land today is either developed or has been extensively modified by human activity sometime in the recent past. Development of these areas include a variety of anthropogenic disturbances, especially in cases of permanent impacts to natural communities. Disturbed areas include but are not limited to dirt roads, off-highway use, pavement, concrete, buildings and structures, bridges, active agricultural activities, and permanent flood control measures.

Fallow agricultural areas represent a substantial proportion of the undeveloped land in the northern portion of the City of Fontana. These areas are in various stages of succession and are generally found to be covered with non-native grasslands, emergent native vegetation, and non-native species. Over the years, many of these areas have been progressively developed, though undeveloped portions do still exist. These areas may provide suitable habitat for the San Bernardino kangaroo rat (*Dipodomys merriami parvus*) (SBKR), a federally endangered small mammal species.

In many instances, native species occurring in open space within developed areas have been replaced by ornamental landscaping or a variety of non-native annual grasses, including a variety of bromes (*Bromus* spp.), Bermuda grass (*Cynodon dactylon*), and the large Johnson grass (*Sorghum halepense*). Forbs common to the area include: wild radish (*Raphanus raphanistrum* ssp.), red-stemmed filaree (*Erodium cicutarium*), annual bur ragweed (*Ambrosia acanthicarpa*), southern suncup (*Camissoniopsis bistorta*), and mustard (*Brassicaceae* spp.).

Several non-native stands of trees or windrows are located within the developed portions of the City, consisting of large eucalyptus (*Eucalyptus* spp.), Peruvian pepper (*Shinus molle*), olives (*Olea* spp.), and oleander (*Nerium oleander*).

Riversidean Sage Scrub

Within the City of Fontana, remnant stands of Riversidean sage scrub (RSS) occur primarily to the south in the Jurupa Hills and in the north, along the San Gabriel Mountain foothills. RSS is the most xeric expression of coastal sage scrub in southern California. It is the driest, most inland expression of the collection of sage scrub or coastal scrub series, and ranges throughout southern California south into Baja California between approximately 1,500 and 4,500 feet above mean sea level. This community consists primarily as a semi-arid scrub community of the valley floor, dominated by California sagebrush (*Artemisia californica*), white sage (*S. apiana*), black sage (*S. mellifera*), California buckwheat (*Eriogonum fasciculatum*), and California croton (*Croton califonricus*). It gives way to northern mixed chaparral at about 1,700 feet elevation, approximately midway between Alta Loma and Etiwanda. Agricultural activities replaced the coastal sage scrub association with citrus groves, vineyards and introduced plants, such as the eucalyptus windrows in the 19th century.

Northern Mixed Chaparral

This community occurs in a small area along the City's northern boundary in the San Gabriel Mountain foothills, where it is heavily dominated by chamise (*Adenostoma fasciculatum*), and at higher elevations and within some of the higher drainages of the Jurupa Hills. A mountainside community at an elevation of 1,700 to 6,000 feet, this chaparral community is composed of fire-adapted, broad-leaved shrubs. Dominant plants include manzanita (*Arctostaphylos* spp.), coast live oak (*Quercus agrifolia*), ceanothus (*Ceanothus* spp.), toyon (*Heteromeles arbutifolia*), hollyleaf cherry (*Prunus ilicifolia*), and chaparral yucca (*Hesperoyucca whipplei*).

Riversidean Alluvial Fan Sage Scrub

There are three stages of Riversidean alluvial fan sage scrub (RAFSS) habitat: pioneer, intermediate, and mature. The City of Fontana contains both intermediate and mature RAFSS habitats. Within City boundaries, intermediate RAFSS is present in small areas between I-15 and Lytle Creek Road, off of Victoria Street east of I-15, and east of Etiwanda Avenue between San Bernardino Avenue and Napa Street. Mature RAFSS is present generally east of Citrus Avenue between I-15 and Summit Avenue.

RAFSS is a subtype of the more widely known coastal sage scrub, described as an open vegetation type adapted to alluvial fans and outwashes. It occurs on sandy, rocky alluvia deposited by streams at the base of the San Gabriel Mountains that experience infrequent episodes of flooding. The community is composed of drought-deciduous shrubs and evergreen woody shrubs, with a substantial herbaceous/wildflower understory. The RAFSS plant

communities or habitats found within the City and its SOI are considered a sensitive biological resource by several regulatory and conservation agencies including the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and California Native Plant Society (CNPS).

Intermediate RAFSS: Mid-elevated locations above the active floodplain or on terraces are generally much less frequently flooded and therefore support relatively dense mid-successional (intermediate) plant species, primarily subshrubs. Characteristic species within intermediate RAFSS include California buckwheat, yerba santa (*Eriodictyon trichocalyx*), Palmer's goldenbush (*Ericameria palmeri*), white sage, pine-bush (*Ericameria pinifolia*), matchweed (*Gutierrezia californica*), deerweed (*Acmispon glaber*), California juniper (*Juniperus californica*), chaparral yucca, valley cholla (*Cylindropuntia californica*), and coastal prickly pear (*Opuntia littoralis*).

Mature RAFSS: Higher terraces experience minimal fluvial events and thus support late successional (mature) plant species consisting of dense subshrubs and woody shrubs. Characteristic species within mature RAFSS include California sagebrush, prickly pear (*Opuntia parryi*), yerba santa (*Eriodictyon angustifolium*), chamise, deerweed, California buckwheat, sugar bush (*Rhus ovata*), and holly-leaved cherry.

Southern Sycamore-Alder Riparian Woodland

This diverse community of riparian species is found along the streams beds of San Sevaine Canyon, Duncan Canyon, Morse Canyon, and various unnamed creeks along the south-facing side of the San Gabriel Mountains. Trees commonly seen in the streamside woodland include white alder (*Alnus rhombifolia*), big leaf maple (*Acer macrophyllum*), canyon oak (*Quercus chrysolepis*), California bay (*Umbellularia californica*), western sycamore (*Platanus racemosa*), black walnut (*Juglans californica*), ash (*Fraxinus dipetala*), black cottonwood (*Populus trichocarpa*), Fremont cottonwood (*P. fremontii*), arroyo willow (*Salix lasiolepis*), and black willow (*S. gooddingii*).

California Walnut Woodland

Within City boundaries, this plant community is found along the southern portion of San Sevaine Canyon and in other unnamed drainages on the south-facing side of the San Gabriel Mountains. The California walnut woodland community consists of California black walnut trees with an understory of alluvial scrub species. The walnut woodland generally appears as scattered walnut trees with an open canopy growing with western sycamores. This plant community was once extensive throughout the foothills of Southern California but is now greatly diminished due to agriculture and urban development. California walnut woodlands are considered a sensitive habitat by CDFW.

Non-Native Annual Grassland

In the City of Fontana, non-native grasslands are found in vacant lots throughout the City as well as in many larger, open fields north of Baseline Avenue. Non-native annual grassland areas are disturbed or graded areas that have revegetated with opportunistic weedy species, primarily annual grasses. These species include wild oat (*Avena barbata*), bromes, and Mediterranean schismus (*Schismus barbatus*), as well as some native wildflowers such as popcorn flower (*Plagiobothrys* spp.) and fiddleneck (*Amsinckia* spp.). Pockets of native grasslands may be located in more protected areas within the northern portions of the City.

In developed areas, landscaping or a variety of annual grasses and weedy forbs have replaced native species. The non-native annual grass species found within the City include a variety of bromes: downy brome (*Bromus tectorum*), Australian chess (*B. arenarius*), ripgut brome (*B. diandrus*), and others. Bermuda grass (dactylon) and Johnson grass (*Sorghum alepense*) also occur in the area. Forbs common to the area include Saharan mustard (*Brassica tournefortii*), red-stemmed filaree (*Erodium cicutarium*), annual bur ragweed (*Ambrosia acanthicarpa*), and southern suncups (*Cammissonia bistorta*). In more disturbed areas, grasslands may be almost entirely overgrown with Russian thistle (*Salsola tragus*) and/or mustard (*Brassicaceae* spp.).

This habitat is particularly valuable to raptors and other avian species as foraging habitat. Bird species that may be found using this habitat include northern harrier (*Circus cyaneus*), burrowing owl (*Athene cunicularia*), homed lark (*Eremophila alpestris*), red-tailed hawk (*Buteo jamaicensis*), ferruginous hawk (*Buteo regalis*), loggerheaded shrike (*Lanius ludovicianus*), and western tanager (*Piranga ludoviciana*).

Agricultural Lands

Within City boundaries, agricultural lands are located along the western boundary of the City, southeast of I-15 between Baseline Avenue to the south and Wilson Avenue/Beech Avenue to the north. These areas are generally vegetated with extensive rows of various crops, although some also contain non-native grasses in the open spaces.

Ornamental Woodland

Several scattered ornamental woodlands and windrows exist throughout the City, though are concentrated in the vicinity of I-15 and Citrus Avenue between I-10 and Jurupa Avenue. Ornamental woodlands are human-created woodlands using non-native trees and shrubs. Common species of trees found within ornamental woodlands throughout the City of Fontana include various species of eucalyptus as relic windrows that once provided windbreaks for agricultural activities, tamarisk (*Tamarix* spp.), and Peruvian pepper trees.

Fauna

There is a direct relationship between the type and diversity of vegetation and land use occurring in an area and the type and diversity of wildlife supported there. Development throughout the City has resulted in heavily disturbed conditions within most of the remaining naturally occurring habitats. These conditions have substantially reduced the range of wildlife that occur in the City to those species that have adapted to close human contact, with the exception of the San Gabriel Mountains foothills in the north and Jurupa Hills in the south. What remains throughout most of the City is an abbreviated predator-prey food chain consisting of squirrels, voles, white-tail kites (*Elanus leucurus*), red-tail hawks, occasional coyotes (*Canis latrans*), and domestic dogs and cats. The most noticeable form of wildlife is the California ground squirrel (*Otospermophilus beecheyi*).

Fish

Very few hydrogeomorphic features (e.g., creeks, ponds, lakes, reservoirs) that would provide suitable habitat for fish occur within the City. Those features that could provide suitable habitat for fish are mainly intermittent and ephemeral features located in the San Gabriel Mountains and the Jurupa Hills, as well as scattered drainages within the developed portions of the City. A small number of presumably perennial artificial basins/stock ponds occur in north Fontana at the base of the San Gabriel Mountains. Because there is little to no perennial water within the City outside of the aforementioned artificial small ponds, few, if any, native fish populations are expected to be present.

Amphibians

As with fish, because of the lack of suitable hydrogeomorphic features supporting suitable habitat throughout much of the City, few amphibians would be expected to occur within City boundaries. Amphibians most likely to occur include Baja California chorus frog (*Pseudacris hypochondriaca*), western toad (*Anaxyrus boreas*), and the non-native American bullfrog (*Lithobates catesbeianus*).

Reptiles

The City is mostly developed or heavily disturbed with limited natural or open habitat. Natural habitat types are primarily restricted to the northern and southern portions of the City, although disturbed open spaces and non-native grasslands are located in generally small parcels scattered throughout the City. The City has the potential to support Great Basin fence lizard (*Sceloporus occidentalis longipes*), western side-blotched lizard (*Uta stansburiana elegans*), coastal whiptail (*Aspidoscelis tigris stejnegeri*), alligator lizard (Elgaria multicarinata), gopher snake (Pituophis catenifer), and southern Pacific rattlesnake (Crotalus oreganus helleri), with higher concentrations of these species expected in less developed areas.

Birds

The City of Fontana provides suitable foraging and nesting habitat for a variety of avian species. The species observed most commonly during the biological surveys conducted for this EIR update included rock pigeon (*Columba livia*), Eurasian collared-dove (*Streptopelia decaocto*), mourning dove (*Zenaida macroura*), American kestrel (*Falco sparverius*), black phoebe (*Sayornis nigricans*), American crow (*Corvus brachyrhynchos*), northern mockingbird (*Mimus polyglottos*), European starling (*Sturnus vulgaris*), house finch (*Haemorhous mexicanus*), lesser goldfinch (*Spinus psaltria*), and house sparrow (*Passer domesticus*) (Michael Baker International 2015).

Mammals

The City provides suitable habitat primarily in the northern and southern portions of the City limits for a variety of mammalian species adapted to human presence and disturbance, although there is a high likelihood to have California ground squirrels, in particular, present in the small vacant lots that are scattered throughout the City. Other mammal species that have the potential to occur within the City include Virginia opossum (*Didelphis virginiana*), desert cottontail (*Sylvilagus audubonii*), Botta's pocket gopher (*Thomomys bottae*), deer mouse (*Peromyscus* sp.), coyote, and raccoon (*Procyon lotor*).

5.3.3 Special Status Wildlife, Plants, and Habitat

5.3.3.1 Sensitive Plants

Special status plants are those listed under federal or State Endangered Species Acts, protected under official conservation programs (e.g., Multi-Species Habitat Conservation Programs [MSHCPs]), and/or considered sensitive, such as those listed by the CNPS. The CNPS utilizes the California Rare Plant Rank (CRPR) ranking system to define the status of sensitive plant species, as follows:

- 1A: Plants presumed extinct in California
- 1B: Plants that are rare, threatened, or endangered in California and elsewhere
- 2: Plants that are rare, threatened, or endangered in California but more common elsewhere
- 3: Plants about which the CNPS needs more information. This is the review list.
- 4: Plants of limited distribution. This is the watch list.

The California Natural Diversity Database (CNDDB) inventories occurrences of rare, threatened, endangered, and sensitive animals, plants, and natural communities in California. The CNDDB inventories both aquatic and terrestrial natural communities that are extremely high quality, very limited distribution, or threatened. The CNDDB inventory for the Cucamonga Peak, Devore, Fontana, and Guasti USGS 7.5-minute Quadrangles provides species occurrences within and near the Planning Area. The CNPS Inventory of Rare and Endangered Vascular Plants of

California supplied information regarding the distribution and habitats of vascular plants in the vicinity of the City.

According to the CNDDB and CNPS, 33 sensitive plant species have been recorded in the Cucamonga Peak, Devore, Fontana, and Guasti quadrangles. Open spaces within the City support limited native plant communities, with most vegetation consisting of non-native grasslands interspersed with developed and highly disturbed areas. Within the Planning Area, native habitat persists primarily north of Summit Avenue and south of Jurupa Avenue, where sensitive plant species may still occur. There is limited, if any, suitable habitat for sensitive plant species throughout the developed portions of the City. Based on known recent distribution records, two sensitive plant species have been documented within the City of Fontana: Plummer's mariposa lily (*Calochortus plummerae*) and Parry's spineflower (*Chorizanthe parryi* var. *parryi*). Based on habitat requirements for specific species and the availability and quality of habitats present, it was determined that there is a moderate potential for an additional three sensitive plant species to occur within City limits: mesa horkelia (*Horkelia cuneata* var. *puberula*), Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*), and short-joint beavertail (*Opuntia basilaris* var. *brachyclada*). The remaining 28 sensitive plant species have a low potential to occur within City limits or are presumed absent. Table 5.3-1 lists the special status plants that have been documented within the Planning Area according to the CNDDB and CNPS database searches and summarizes the rational used to establish their potential to occur. Brief species accounts are provided below for those plant species with a moderate or higher potential to occur within City limits.

The following criteria was used to assess each plant species' potential to occur within the Planning Area:

- Present: Taxa were observed within the Planning Area during recent botanical surveys or population has been acknowledged by CDFW, USFWS, or local experts.
- High: Both a documented recent record exists of the taxa within the City limits or immediate vicinity and the environmental conditions (e.g., elevation range and soil type) associated with taxa is present within the Planning Area.
- Moderate: A documented record exists of the taxa within the City limits or the immediate vicinity, but the environmental conditions associated with taxa presence are marginal or limited within the Planning Area.
- Low: A historical record exists of the taxa within the Planning Area or general vicinity and the environmental conditions associated with taxa presence are marginal and/or limited within the Planning Area.
- Presumed Absent: A historical record exists of the taxa in the general vicinity, but environmental conditions associated with taxa presence are absent.

Table 5.3-1 Potentially Occurring Sensitive Plant Species*

Scientific Name **Common Name**	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Abronia villosa var. *aurita* chaparral sand-verbena	Fed: None CA: None CRPR: 1B.1	Grows in sandy soils in coastal sage scrub and in chaparral habitats. Found at elevations ranging from 262 to 5,249 feet. Blooming period ranges from January to September.	No	**Low.** There is marginal habitat for this species in the northern limits of the City.
Ambrosia monogyra singlewhorl burrobrush	Fed: None CA: None CRPR: 2B.2	Found in sandy soils in chaparral and Sonoran Desert scrub. Found at elevations ranging from 3 to 1,640 feet. Blooming period ranges from August to November.	No	**Low.** There is marginal habitat for this species in the northern limits of the City.
Arctostaphylos glandulosa ssp. *gabrielensis* San Gabriel manzanita	Fed: None CA: None CRPR: 1B.2	Grows on rocky outcrops in chaparral. Found at approximately 4,921 feet in elevation. Blooming period is in March.	No	**Presumed absent.** The City is well outside of the known elevation range for this species.
Arenaria paludicola marsh sandwort	Fed: E CA: E CRPR: 1B.1	Grows mainly in wetlands and freshwater marshes in arid climates. The plant can grow in saturated acidic bog soils and soils that are sandy with a high organic content. Found at elevations ranging from 33 to 558 feet. Blooming period is from May to August.	No	**Presumed absent.** The City is well outside of the known elevation range for this species.
Calochortus plummerae Plummer's mariposa-lily	Fed: None CA: None CRPR: 4.2	Prefers openings in chaparral, foothill woodland, coastal sage scrub, valley foothill grasslands, cismontane woodland, lower montane coniferous forest and yellow pine forest. Often found on dry, rocky slopes and soils and brushy areas. Can be very common after a fire. Found at elevations ranging from 459 to 6,299 feet. Blooming period is from May to July.	No	**Present.** This species has been recorded within and in areas immediately adjacent to City limits.
Centromadia pungens ssp. *laevis* smooth tarplant	Fed: None CA: None CRPR: 1B.1	Occurs in alkaline soils within chenopod scrub, meadows and seeps, playas, riparian woodland, and valley and foothill grassland habitats. Often found in disturbed, moist areas. Grows in elevation ranging from 0 to 2,100 feet. Blooming period ranges from April to September.	No	**Low.** There is marginal habitat for this species within the City limits.

Table 5.3-1 Potentially Occurring Sensitive Plant Species*

Scientific Name **Common Name**	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Chloropyron maritimum ssp. *maritimum* salt marsh bird's-beak	Fed: E CA: E CRPR: 1B.2	Upper terraces and higher edges of coastal salt marshes where tidal inundation is periodic. Found at elevations ranging from 0 to 99 feet. Blooming period is from May to October.	No	**Presumed absent.** The City is well outside of the known elevation range for this species.
Chorizanthe parryi var. *parryi* Parry's spineflower	Fed: None CA: None CRPR: 1B.2	Occurs on sandy and/or rocky soils in chaparral, coastal sage scrub, and sandy openings within alluvial washes and margins. Found at elevations ranging from 951 to 3,773 feet. Blooming period is from April to June.	No	**Present.** This species has been recorded within and in areas adjacent to City limits.
Chorizanthe xanti var. *leucotheca* white-bracted spineflower	Fed: None CA: None CRPR: 1B.2	Grows in Mojavean desert scrub, pinyon-juniper woodland, and on alluvial fans in coastal scrub. Found at elevations ranging from 984 to 3,937 feet. Blooming period is from April to June.	No	**Low.** While alluvial fan sage scrub is present in the northern City limits, it is cut off from natural flow patterns by surrounding development.
Cladium californicum California saw-grass	Fed: None CA: None CRPR: 2B.2	Found in meadows and seeps. Also in alkaline or freshwater marshes and swamps. Found at elevations ranging from 197 to 2,838 feet. Blooming period is from June to September.	No	**Presumed absent.** There is no suitable habitat within the City limits.
Claytonia lanceolata var. *peirsonii* Peirson's spring beauty	Fed: None CA: None CRPR: 3.1	Grows in upper montane coniferous forest and subalpine coniferous forest, usually on northern aspects in granitic scree slopes. Often found in areas with sandy or file soil components and granitic cobbles. Found at elevations ranging from 7,005 to 9,006 feet. Blooming period is from May to June.	No	**Presumed absent.** The City is well outside of the known elevation range for this species.
Dodecahema leptoceras slender-horned spineflower	Fed: E CA: E CRPR: 1B.1	Chaparral, coastal scrub (alluvial fan sage scrub). Flood deposited terraces and washes. Found at elevations ranging from 1,181 to 2,690 feet. Blooming period is from April to June.	No	**Low.** While alluvial fan sage scrub is present in the northern City limits, it is cut off from natural flow patterns by surrounding development.

Table 5.3-1 Potentially Occurring Sensitive Plant Species*

Scientific Name **Common Name**	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Dudleya multicaulis many-stemmed dudleya	Fed: None CA: None CRPR: 1B.2	Found in chaparral, coastal scrub, and valley and foothill grasslands in heavy, often clayey soils or grassy slopes. Found at elevations ranging from 49 to 2,592 feet. Blooming period is from April to July.	No	**Low.** There is marginal habitat for this species in the northern limits of the City.
Eriastrum densifolium ssp. *sanctorum* Santa Ana River woollystar	Fed: E CA: E CRPR: 1B.1	Grows in sandy or gravelly soils within chaparral and coastal scrub habitat. Found at elevations ranging from 299 to 2,001 feet. Blooming period is from April to September.	No	**Presumed absent.** This species is not known to occur within City limits.
Eriogonum microthecum var. *johnstonii* Johnston's buckwheat	Fed: None CA: None CRPR: 1B.3	Grows in subalpine coniferous forest and upper montane coniferous forest on slopes and ridges on granite or limestone surfaces. Found at elevations ranging from 6,001 to 9,600 feet. Blooming period is from July to September.	No	**Presumed absent.** The City is well outside of the known elevation range for this species.
Horkelia cuneata var. *puberula* mesa horkelia	Fed: None CA: None CRPR: 1B.1	Occurs on sandy or gravelly soils in chaparral, woodlands, and coastal scrub plant communities. Found at elevations ranging from 230 to 2,657 feet. Blooming period is from February to September.	No	**Moderate.** There is suitable habitat in the northern and southern City limits. There is a historic (1904) record of this species within City limits in the Jurupa Hills, but it is believed to be possibly extirpated.
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	Fed: None CA: None CRPR: 4.3	Dry soils on chaparral and coastal sage scrub. Found at elevations ranging from 3 to 2,904 feet. Blooming period is from January to July.	No	**Moderate.** There is suitable habitat in the northern and southern City limits.

Table 5.3-1 Potentially Occurring Sensitive Plant Species*

Scientific Name **Common Name**	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Lilium parryi lemon lily	Fed: None CA: None CRPR: 1B.2	Occurs in lower montane coniferous forest, meadows and seeps, riparian forest, and upper montane coniferous forest. Generally occurs in wet, mountainous terrain; forested areas; on the shady edges of streams; or in open, boggy meadows and seeps. Grows at elevations ranging from 4,003 to 9,006 feet. Blooming period is from July to August.	No	**Presumed absent.** The City is well outside of the known elevation range for this species.
Linanthus concinnus San Gabriel linanthus	Fed: None CA: None CRPR: 1B.2	Grows in lower montane coniferous forest and upper montane coniferous forest on dry, rocky slopes. Often associated with Jeffrey pine/canyon oak forests. Grows at elevations ranging from 5,167 to 8,350 feet. Blooming period is from April to July.	No	**Presumed absent.** The City is well outside of the known elevation range for this species.
Lycium parishii Parish's desert-thorn	Fed: None CA: None CRPR: 2B.3	Habitats include coastal scrub and Sonoran Desert scrub. Found at elevations ranging from 443 to 3,281 feet. Blooming period is from March to April.	No	**Presumed absent.** While there is suitable habitat, this species is believed to be extirpated from the entire County of San Bernardino.
Monardella australis ssp. *jokerstii* Jokerst's monardella	Fed: None CA: None CRPR: 1B.1	Grows in lower montane coniferous forest and chaparral on steep scree or talus slopes between breccia. Usually found on secondary alluvial benches along drainages and washes. Found at elevations ranging from 4,429 to 5,741 feet. Blooming period is from July to September.	No	**Presumed absent.** The City is well outside of the known elevation range for this species.

Table 5.3-1 Potentially Occurring Sensitive Plant Species*

Scientific Name **Common Name**	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Monardella pringlei Pringle's monardella	Fed: None CA: None CRPR: 1A	Prefers sandy soils within coastal scrub habitat. Found at elevations ranging from 984 to 1,312 feet. Blooming period is from May to June.	No	**Low.** There is marginal habitat in the northern and southern City limits. A historic (1904) record of this species is just south of the City limits, but was not observed in a 1979 survey (conducted outside the appropriate blooming season).
Muhlenbergia californica California muhly	Fed: None CA: None CRPR: 4.3	Found in chaparral, coastal scrub, lower montane coniferous forest, meadows and seeps. Can be found along stream banks within these habitats. Found at elevations ranging from 328 to 6,562 feet. Blooming period is from June to September.	No	**Presumed absent.** There is no suitable habitat within the City limits.
Navarretia prostrata prostrate vernal pool navarretia	Fed: None CA: None CRPR: 1B.1	Grows in coastal scrub, meadows and seeps, vernal pools, valley and foothill grassland habitats. Found at elevations ranging from 10 to 3,970 feet. Blooming period is from April to June.	No	**Presumed absent.** There is no suitable habitat within the City limits.
Opuntia basilaris var. *brachyclada* short-joint beavertail	Fed: None CA: None CRPR: 1B.2	Occurs in chaparral, Joshua tree woodland, Mojavean desert scrub, and pinyon-juniper woodland in sandy soils or in coarse, granitic loam. Found at elevations ranging from 1,394 to 5,906 feet. Blooming period is from April to August.	No	**Moderate.** There is suitable habitat for this species in the mountains in the northern City limits.
Oreonana vestita woolly mountain-parsley	Fed: None CA: None CRPR: 1B.3	Grows in subalpine coniferous forest and upper montane coniferous forest on high ridges underlain by scree, talus, or gravel. Found at elevations ranging from 7,907 to 11,483 feet. Blooming period is from March to September.	No	**Presumed absent.** The City is well outside of the known elevation range for this species.

Table 5.3-1 Potentially Occurring Sensitive Plant Species*

Scientific Name **Common Name**	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Phacelia stellaris Brand's star phacelia	Fed: None CA: None CRPR: 1B.1	Found in coastal dune and coastal scrub habitats. Found at elevations ranging from 3 to 1,312 feet. Blooming period is from March to June.	No	**Low.** There is marginal habitat for this species within City limits.
Sagittaria sanfordii Sanford's arrowhead	Fed: None CA: None CRPR: 1B.2	Found in standing or slow-moving freshwater ponds, marshes, and ditches. Found at elevations ranging from 0 to 2,133 feet. Blooming period is from May to November.	No	**Presumed absent.** There is no suitable habitat within the City limits.
Senecio aphanactis chaparral ragwort	Fed: None CA: None CRPR: 2B.2	Grows in chaparral, cismontane woodland, and coastal scrub habitat. Found at elevations ranging from 49 to 2,625 feet. Blooming period is from January to April.	No	**Low.** There is a historic (1909) record of this species immediately south of City limits in the Jurupa Hills in Riverside County. It is not known to occur in San Bernardino County.
Sphenopholis obtusata prairie wedge grass	Fed: None CA: None CRPR: 2B.2	Prefers cismontane woodland, meadows and seeps. Found at elevations ranging from 984 to 6,562 feet. Blooming period is from April to July.	No	**Presumed absent.** There is no suitable habitat within the City limits.
Streptanthus bernardinus Laguna Mountains jewelflower	Fed: None CA: None CRPR: 4.3	Grows in chaparral and lower montane coniferous forest on clay or decomposed granite soils. It is sometimes found in disturbed areas such as streamsides or roadcuts. Found at elevations ranging from 4,724 to 8,202 feet. Blooming period is from May to August.	No	**Presumed absent.** The City is well outside of the known elevation range for this species.

Table 5.3-1 Potentially Occurring Sensitive Plant Species*

Scientific Name **Common Name**	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Symphyotrichum defoliatum San Bernardino aster	Fed: None CA: None CRPR: 1B.2	Grows in cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, and vernally mesic valley and foothill grassland. Can be found growing near ditches, streams, and springs within these habitats. Found at elevations ranging from 7 to 6,693 feet. Blooming period is from July to November.	No	**Presumed absent.** There is no suitable habitat within the City limits.
Viola pinetorum var. *grisea* grey-leaved violet	Fed: None CA: None CRPR: 1B.3	Occurs in subalpine coniferous forest, upper montane coniferous forest, and meadows and seeps on dry mountain peaks and slopes. Found at elevations ranging from 4,921 to 11,155 feet. Blooming period is from April to July.	No	**Presumed absent.** The City is well outside of the known elevation range for this species.

* Analysis taken from Michael Baker International, 2015

Listing Status

Federal	**State**
E – Endangered	E - Endangered
California Rare Plant Rank (CRPR)	**CRPR Threat Rank**
1A – Plants presumed extirpated in California and either rare or extinct elsewhere	0.1 – Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
1B – Plants rare, threatened, or endangered in California and elsewhere	0.2 – Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
2B – Plants rare, threatened, or endangered in California but more common elsewhere	0.3 – Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)
3 – Review list: Plants about which more information is needed	
4 – Plants presumed extirpated in California but more common elsewhere	

Plummer's Mariposa Lily

Plummer's mariposa lily is a perennial bulbiferous herb that flowers between May and July. It is not state or federally listed; however, it is designated by the CNPS with the Rare Plant Rank 4.2, indicating that it is a plant of limited distribution and is considered fairly threatened in California, with 20-80% of its known occurrences threatened. It was previously designated with the Rare Plant Rank 1B.2 (plants rare, threatened, or endangered in California and elsewhere) but was found to be more common than previously thought. It is endemic to California and is known to occur in Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties, where it can be found in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest in granitic or rocky soils between 328 and 5,577 feet in elevation.

Plummer's mariposa lily was documented in 2004 within City boundaries in upper San Sevaine Creek, in 2001 immediately west of City boundaries in San Sevaine Creek, and in numerous locations in the San Gabriel Mountains immediately north of City boundaries and in the Jurupa Hills immediately south of City boundaries. It is expected to be present within City boundaries, particularly in RSS and chaparral in north and south Fontana in the San Gabriel Mountains and Jurupa Hills, respectively.

Parry's Spineflower

Parry's spineflower is an annual herb that flowers between April and June. It is not state or federally listed; however, it is designated by the CNPS with the Rare Plant Rank 1B.1, indicating that is rare, threatened, or endangered in California and elsewhere, and is seriously endangered in California with over 80% of its known occurrences threatened. It is endemic to California and is only known from Los Angeles, Riverside, and San Bernardino Counties. It occurs in sandy or rocky openings in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland at elevations between 131 and 5,594 feet.

Parry's spineflower was documented from 1999-2012 in a widely-scattered area east of Sierra Avenue and south of Riverside Avenue, adjacent to an area that has now been developed. It is presumed to still be extant at this location and within City boundaries, where it may also occur in RSS and chaparral in north and south Fontana in the San Gabriel Mountains and Jurupa Hills, respectively.

Mesa Horkelia

Mesa horkelia is a perennial herb that flowers between February and September. It is not state or federally listed; however, it is designated by the CNPS with the Rare Plant Rank 1B.1, indicating that is rare, threatened, or endangered in California and elsewhere, and is seriously endangered in California with over 80% of its known occurrences threatened. It is endemic to California and is only known from Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, San Luis Obispo, and Ventura Counties, although it is presumed extirpated in Riverside and San Diego Counties. It occurs in sandy or gravelly soils in maritime chaparral, cismontane woodland,

and coastal scrub at elevations between 230 and 2,657 feet. Within City boundaries, mesa horkelia has a moderate potential to occur primarily in south Fontana in the Jurupa Hills.

Robinson's Pepper-Grass

Robinson's pepper-grass is an annual herb that flowers between January and July. It is not state or federally listed. However, it is designated by the CNPS with the Rare Plant Rank 4.3, indicating that it is a plant of limited distribution and is not very threatened in California, with less than 20% of its known occurrences threatened. It was previously designated with the Rare Plant Rank 1B.2 (plants rare, threatened, or endangered in California and elsewhere) but was found to be more common than previously thought. In California, it is known from Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, and Ventura Counties, as well as on Santa Cruz Island. It occurs in chaparral or coastal scrub at elevations between 3 and 2,904 feet.

Robinson's pepper-grass was documented in 1998 immediately south of City boundaries in the Jurupa Hills, where it was described as being "common." It has a moderate potential to occur within City boundaries in the Jurupa Hills.

Short-Joint Beavertail

Short-joint beavertail is a perennial-stem succulent that flowers between April and August. It is not state or federally listed; however, it is designated by the CNPS with the Rare Plant Rank 1B.2, indicating that is rare, threatened, or endangered in California and elsewhere, and is considered fairly threatened in California, with 20-80% of its known occurrences threatened. It is endemic to California and is only known from Los Angeles and San Bernardino Counties. It occurs in chaparral, Joshua tree woodland, Mojavean desert scrub, and pinyon-juniper woodlands at elevations between 1,394 and 5,906 feet. Within City boundaries, short-joint beavertail has a moderate potential to occur in north Fontana in the chaparral of the San Gabriel Mountains.

5.3.3.2 Sensitive Wildlife

Special status wildlife species are those listed under federal or State Endangered Species Acts, listed as Species of Special Concern by the State, protected under official conservation programs (e.g., MSHCPs), and/or those designated by local legislation as requiring protection. The CNDDB inventories occurrences of rare, threatened, endangered, and sensitive animals in California. The CNDDB inventory for the Cucamonga Peak, Devore, Fontana, and Guasti USGS 7.5-minute Quadrangles provides species occurrences within and near the Planning Area.

According to the CNDDB, 38 sensitive wildlife species have been reported in the Cucamonga Peak, Devore, Fontana, and Guasti quadrangles. Based on known distribution records and/or direct observation, 13 sensitive wildlife species are known to regularly occur within the City of Fontana boundaries and are assumed to be present. These include: Delhi sands flower-loving fly (*Raphiomidas terminates abdominalis*) (DSF), coast horned lizard (*Phrynosoma blainvillii*),

Cooper's hawk (*Accipiter cooperii*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), golden eagle (*Aquila chrysaetos*), Bell's sparrow (*Artemisiospiza belli*), burrowing owl, northern harrier, California horned lark (*Eremophila alpestris actia*), loggerhead shrike, coastal California gnatcatcher (*Polioptila californica*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), and Los Angeles pocket mouse (*Perognathus longimembris brevinasus*). Based on habitat requirements for specific species and the availability and quality of habitats present, it was determined that there is a moderate or high potential for nine additional sensitive wildlife species to occur. These include: silvery legless lizard (*Anniella pulchra pulchra*), orange-throated whiptail (*Aspidoscelis hyperythra*), red-diamond rattlesnake (*Crotalus ruber*), Swainson's hawk (*Buteo swainsoni*), yellow warbler (*Setophaga petechia*), western mastiff bat (*Eumops perotis californicus*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), San Diego desert woodrat (*Neotoma lepida intermedia*), and southern grasshopper mouse (*Onychomys torridus ramona*). The remaining 16 sensitive wildlife species have a low potential to occur within City limits or are presumed absent. Table 5.3-2 lists the special status wildlife species that have been documented within the Planning Area according to the CNDDB database search and summarizes the rational used to establish their potential to occur. Brief species accounts are provided below for those wildlife species with a moderate or higher potential to occur within City limits. Although it has a low potential to occur, a species account is provided for SBKR due to its regional significance.

The following criteria was used to assess each animal species' potential to occur within the Planning Area:

- Present: Taxa (or their sign) were observed in the Planning Area or in the same watershed (aquatic taxa only) during the most recent surveys, or a population has been acknowledged by CDFW, USFWS, or local experts.
- High: Habitat (e.g., vegetation community and soils) for the taxa occurs on within the City limits and a known occurrence has been recorded in the Planning Area or immediate vicinity within the past 20 years; however, these taxa were not detected during the most recent surveys.
- Moderate: Habitat for the taxa occurs on site and a known regional record occurs within the database search, but not within 5 miles of the Planning Area or within the past 20 years; or a known occurrence occurs within 5 miles of the Planning Area and within the past 20 years and marginal quality or limited availability of habitat occurs on site; or, the taxa's range includes the geographic area and suitable habitat exists.
- Low: Limited habitat for the taxa occurs in the Planning Area and no known occurrences were found in the database search and the taxa's range includes the geographic area.
- Presumed Absent: A historical record exists of the taxa in the general vicinity, but environmental conditions associated with taxa presence are absent.

Table 5.3-2 Potentially Occurring Sensitive Wildlife Species*

Scientific Name **Common Name**	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Invertebrates				
Rhaphiomidas terminatus abdominalis Delhi Sands flower-loving fly	Fed: E CA: None	DSF habitat is limited to areas that include Delhi fine sand, an aeolian (wind-deposited) soil type. The highest density of DSF have been found in habitat that includes a variety of plants including California buckwheat, California croton, deerweed, and telegraph weed.	No	**Present.** This species is known to occur within City limits.
Fish				
Catostomus santaanae Santa Ana sucker	Fed: T CA: CSC	Occur in the watersheds draining the San Gabriel and San Bernardino Mountains of southern California. Steams that Santa Ana Sucker inhabit are generally perennial streams with water ranging in depth from a few inches to several feet and with currents ranging from slight to swift.	No	**Presumed absent.** There is no suitable habitat within City limits.
Gila orcuttii arroyo chub	Fed: None CA: CSC	Warm streams of the Los Angeles Plain, which are typically muddy torrents during the winter, and clear quiet brooks in the summer, possibly drying up in places. They are found both in slow-moving and fast-moving sections, but generally deeper than 40 cm.	No	**Presumed absent.** There is no suitable habitat within City limits.
Rhinichthys osculus ssp. 3 Santa Ana speckled dace	Fed: None CA: CSC	Requires permanent flowing streams within summer water temperatures of 17 – 20 degrees Celsius. Inhabits shallow cobble and gravel riffles and small streams that flow through steep, rocky canyons with chaparral covered walls.	No	**Presumed absent.** There is no suitable habitat for this species within City limits.
Amphibians				
Batrachoseps gabrieli San Gabriel slender salamander	Fed: None CA: None	Occurs only in the San Gabriel Mountains. Often found under rocks, wood, fern fronds, and on soil at the base of talus slopes. Most active on the surface in winter and early spring.	No	**Presumed absent.** The City is outside of this species' known range.

Table 5.3-2 Potentially Occurring Sensitive Wildlife Species*

Scientific Name **Common Name**	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Rana muscosa Sierra Madre yellow-legged frog	Fed: E CA: E	Occurs in lower elevation habitats characterized by rocky streambeds and wet meadows, while higher elevation habitats include lakes, ponds, and streams. Occupy streams in narrow, rock-walled canyons.	No	**Presumed absent.** There is no suitable habitat for this species within City limits.
Reptiles				
Anniella pulchra pulchra silvery legless lizard	Fed: None CA: CSC	Occurs primarily in areas with sandy or loose loamy soils under sparse vegetation of beaches, chaparral, or pine-oak woodland; or near sycamores, oaks, or cottonwoods that grow on stream terraces. Often found under or in the close vicinity of logs, rocks, old boards, and the compacted debris of woodrat nests.	No	**Moderate.** This species may occur along drainages leaving the San Gabriel Mountains in the northern limits of the City.
Aspidoscelis hyperythra orange-throated whiptail	Fed: None CA: CSC	Inhabits low-elevations coastal scrub, chamise-redshank chaparral, mixed chaparral, and valley-foothill hardwood habitats. Semi-arid brushy areas typically with loose soil and rocks, including washes, streamsides, rocky hillsides, and coastal chaparral.	No	**Moderate.** There is suitable habitat for this species at the base of the San Gabriel Mountains and Jurupa Hills.
Crotalus ruber red-diamond rattlesnake	Fed: None CA: CSC	It can be found from the desert, through dense chaparral in the foothills (it avoids the mountains above around 4,000 feet), to warm inland mesas and valleys, all the way to the cool ocean shore. It is most commonly associated with heavy brush with large rocks or boulders. Dense chaparral in the foothills, cactus or boulder associated coastal sage scrub, oak and pine woodlands, and desert slope scrub associations are known to carry populations of the northern red-diamond rattlesnake; however, chamise and red shank associations may offer better structural habitat for refuges and food resources for this species than other habitats.	No	**Moderate.** There is suitable habitat for this species in the northern and southern portions of the City.

Table 5.3-2 Potentially Occurring Sensitive Wildlife Species*

Scientific Name **Common Name**	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Lampropeltis zonata (parvirubra) California mountain kingsnake (San Bernardino population)	Fed: None CA: CSC	Found in diverse habitats including coniferous forest, oak-pine woodlands, riparian woodland, chaparral, Manzanita, and coastal sage scrub. Wooded areas near a stream with rock outcrops, talus or rotting logs that are exposed to the sun.	No	**Low.** There is little if any suitable habitat for this species within City limits.
Phrynosoma blainvillii coast horned lizard	Fed: None CA: CSC	Occurs in a wide variety of vegetation types including coastal sage scrub, annual grassland, chaparral, oak woodland, riparian woodland and coniferous forest. In inland areas, this species is restricted to areas with pockets of open microhabitat, created by disturbance (i.e. fire, floods, roads, grazing, fire breaks). The key elements of such habitats are loose, fine soils with a high sand fraction; an abundance of native ants or other insects; and open areas with limited overstory for basking and low, but relatively dense shrubs for refuge.	No	**Present.** This species is known to occur within City limits.
Thamnophis hammondii two-striped garter snake	Fed: None CA: CSC	Occurs in or near permanent fresh water, often along streams with rocky beds and riparian growth up to 7,000 feet in elevation.	No	**Low.** There is little if any suitable habitat for this species within City limits.
Birds				
Accipiter cooperii Cooper's hawk	Fed: None CA: WL	Generally found in forested areas up to 3,000 feet in elevation, especially near edges and rivers. Prefers hardwood stands and mature forests but can be found in urban and suburban areas where there are tall trees for nesting. Common in open areas during nesting season.	No	**Present.** This species is known to occur within City limits.

Table 5.3-2 Potentially Occurring Sensitive Wildlife Species*

Scientific Name **Common Name**	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Agelaius tricolor tricolored blackbird	Fed: None CA: CE	Range is limited to the coastal areas of the Pacific coast of North America, from Northern California to upper Baja California. Can be found in a wide variety of habitat including annual grasslands, wet and dry vernal pools and other seasonal wetlands, agricultural fields, cattle feedlots, and dairies. Occasionally forage in riparian scrub habitats along marsh borders. Basic habitat requirements for breeding include open accessible water, protected nesting substrate (freshwater marsh dominated by cattails, willows, and bulrushes [*Schoenoplectus* spp.]), and either flooded or thorny or spiny vegetation and suitable foraging space providing adequate insect prey.	No	**Low.** This species has occurred in the past at wastewater treatment plants in adjacent areas but there is little if any habitat within City limits.
Aimophila ruficeps canescens southern California rufous-crowned sparrow	Fed: None CA: WL	Typically found between 3,000 and 6,000 feet in elevation. Breed in sparsely vegetated shrublands on hillsides and canyons. Prefers coastal sage scrub dominated by California sagebrush but can also be found breeding in coastal bluff scrub, low-growing serpentine chaparral, and along the edges of tall chaparral habitats.	No	**Present.** This species is known to occur within City limits.
Aquila chrysaetos golden eagle	Fed: None CA: FP, WL	Occupies nearly all terrestrial habitats of the western states except densely forested areas. Favors secluded cliffs with overhanging ledges and large trees for nesting and cover. Hilly or mountainous country where takeoff and soaring are supported by updrafts is generally preferred to flat habitats. Deeply cut canyons rising to open mountain slopes and crags are ideal habitat.	No	**Present.** This species is known to occur within City limits.

Table 5.3-2 Potentially Occurring Sensitive Wildlife Species*

Scientific Name **Common Name**	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Artemisiospiza belli belli Bell's sage sparrow	Fed: None CA: WL	Occurs in chaparral dominated by fairly dense stands of chamise. Also found in coastal sage scrub in south of range.	No	**Present.** This species is known to occur within City limits.
Athene cunicularia burrowing owl	Fed: None CA: CSC	Primarily a grassland species, but it persists and even thrives in some landscapes highly altered by human activity. Occurs in open, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. The overriding characteristics of suitable habitat appear to be burrows for roosting and nesting and relatively short vegetation with only sparse shrubs and taller vegetation.	No	**Present.** This species is known to occur within City limits.
Buteo swainsoni Swainson's hawk	Fed: None CA: T	Typical habitat is open desert, grassland, or cropland containing scattered, large trees or small groves. Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley. Forages in adjacent grassland or suitable grain or alfalfa fields or livestock pastures.	No	**High.** This species has occurred within the City and in areas adjacent to it in recent years. Occurs only as a transitory migrant.
Circus cyaneus northern harrier	Fed: None CA: CSC	Forages and nests in coastal saltwater and freshwater marshes and grasslands.	No	**Present.** This species is known to occur within City limits.
Empidonax traillii extimus southwestern willow flycatcher	Fed: E CA: E	Occurs in riparian woodlands in southern California. Typically requires large areas of willow thickets in broad valleys, canyon bottoms, or around ponds and lakes. These areas typically have standing or running water or are at least moist.	No	**Low.** There is little if any suitable habitat for this species within City limits.

Table 5.3-2 Potentially Occurring Sensitive Wildlife Species*

Scientific Name **Common Name**	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Eremophila alpestris actia California horned lark	Fed: None CA: WL	Common to abundant resident in a variety of open habitats, usually where trees and large shrubs are absent. Breed in level or gently sloping shortgrass prairie, montane meadows, "bald" hills, open coastal plains, fallow grain fields, and alkali flats. In nonagricultural lands, it typically inhabits areas of short vegetation or bare ground, including shortgrass prairie, deserts, brushy flats, and alpine habitat. Within southern California, California horned larks breed primarily in open fields, (short) grasslands, and rangelands. Grasses, shrubs, forbs, rocks, litter, clods of soil, and other surface irregularities provide cover.	Yes	**Present.** This species was observed during biological surveys conducted in support of the General Plan Update *California Environmental Quality Act* (CEQA) process.
Lanius ludovicianus loggerhead shrike	Fed: None CA: CSC	Often found in broken woodlands, shrublands, and other habitats. Prefers open country with scattered perches for hunting and fairly dense brush for nesting.	No	**Present.** This species is known to occur within City limits.
Polioptila californica californica coastal California gnatcatcher	Fed: T CA: CSC	Obligate resident of sage scrub habitats that are dominated by California sagebrush. This species generally occurs below 750 feet elevation in coastal regions and below 1,500 feet inland. It prefers habitat with more low-growing vegetation.	No	**Present.** This species is known to occur within City limits.
Setophaga petechia yellow warbler	Fed: None CA: CSC	Nests over all of California except the Central Valley, the Mojave Desert region, and high altitudes and the eastern side of the Sierra Nevada. Winters along the Colorado River and in parts of Imperial and Riverside Counties. Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders or in mature chaparral. May also use oaks, conifers, and urban areas near stream courses.	No	**Moderate.** There is suitable habitat for this species in select spots within the City, particularly in the drainages in its northern limits.

Table 5.3-2 Potentially Occurring Sensitive Wildlife Species*

Scientific Name **Common Name**	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Vireo bellii pusillus least Bell's vireo	Fed: E CA: E	Primarily occupy Riverine riparian habitat that typically feature dense cover within 1 -2 meters of the ground and a dense, stratified canopy. Typically, it is associated with southern willow scrub, cottonwood-willow forest, mule fat scrub, sycamore alluvial woodlands, coast live oak riparian forest, arroyo willow riparian forest, or mesquite in desert localities. It uses habitat which is limited to the immediate vicinity of water courses, 2,000 feet elevation in the interior.	No	**Low.** There is little if any suitable habitat for this species within City limits.
Mammals				
Chaetodipus fallax fallax northwestern San Diego pocket mouse	Fed: None CA: CSC	Occurs in desert and coastal habitats in southern California, Mexico, and northern Baja California, from sea level to at least 1,400 meters above msl. Found in a variety of temperate habitats ranging from chaparral and grasslands to scrub forests and deserts. Requires low growing vegetation or rocky outcroppings, as well as sandy soils for burrowing.	No	**Present.** This species is known to occur within City limits.
Chaetodipus fallax pallidus pallid San Diego pocket mouse	Fed: None CA: CSC	Common resident of sandy herbaceous areas, usually in association with rocks or course gravel in southwestern California. Occurs mainly in arid coastal and desert border areas. Habitats include coastal scrub, chamise-redshank chaparral, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon-juniper, and annual grassland.	No	**Low.** There is little if any suitable habitat for this species within City limits.

Table 5.3-2 Potentially Occurring Sensitive Wildlife Species*

Scientific Name **Common Name**	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Dipodomys merriami parvus San Bernardino kangaroo rat	Fed: E CA: CSC	Primarily found in Riversidian alluvial fan sage scrub and sandy loam soils, alluvial fans and flood plains, and along washes with nearby sage scrub. May occur at lower densities in Riversidian upland sage scrub, chaparral and grassland in uplands and tributaries in proximity to Riversidian alluvial fan sage scrub habitats. Tend to avoid rocky substrates and prefer sandy loam substrates for digging of shallow burrows.	No	**Low.** Quality and quantity of habitat required to sustain the species is not present within City limits.
Eumops perotis californicus western mastiff bat	Fed: None CA: CSC	Primarily a cliff-dwelling species, roost generally under exfoliating rock slabs. Roosts are generally high above the ground, usually allowing a clear vertical drop of at least three meters below the entrance for flight. In California, it is most frequently encountered in broad open areas. Its foraging habitat includes dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas.	No	**Moderate.** There is suitable habitat for this species particularly in the northern portions of the City.
Lasiurus xanthinus western yellow bat	Fed: None CA: CSC	Roosts in palm trees in foothill riparian, desert wash, and palm oasis habitats with access to water for foraging.	No	**Moderate.** This species has been recorded in the City in the past. Limited habitat remains.
Lepus californicus bennettii San Diego black-tailed jackrabbit	Fed: None CA: CSC	Occurs in diverse habitats, but primarily is found in arid regions supporting shortgrass habitats. Openness of open scrub habitat is preferred over dense chaparral.	No	**High.** There is suitable habitat for this species in areas of sage scrub throughout the City.

Table 5.3-2 Potentially Occurring Sensitive Wildlife Species*

Scientific Name **Common Name**	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Neotoma lepida intermedia San Diego desert woodrat	Fed: None CA: CSC	Occurs in coastal scrub communities between San Luis Obispo and San Diego Counties. Prefers moderate to dense canopies, and especially rocky outcrops.	No	**Moderate.** There is suitable habitat for this species throughout the northern and southern portions of the City.
Nyctinomops femorosaccus pocketed free-tailed bat	Fed: None CA: CSC	Often found in pinyon-juniper woodlands, desert scrub, desert succulent scrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oases.	No	**Low.** There is little if any suitable habitat for this species within City limits.
Onychomys torridus ramona southern grasshopper mouse	Fed: None CA: CSC	Ranges southward from Los Angeles County to the Mexican border, generally west of the desert. Inhabits mesas and valleys along the Pacific slope of the Peninsular and Transverse Ranges in southwestern California and extreme northwestern Baja California, Mexico.	No	**Moderate.** There is suitable habitat for this species in the northern limits of the City.
Ovis canadensis nelsoni Nelson's bighorn sheep	Fed: None CA: None	Require a variety of habitat characteristics related to topography, visibility, forage quality and quantity, and water availability. Prefer areas on or near mountainous terrain that are visually open, as well as steep and rocky. Alluvial fans and washed in flatter terrain is also used for foraging, water, and connectivity between mountainous areas. Tend to avoid dense vegetation and higher elevations that support chaparral.	No	**Presumed absent.** There is no suitable habitat for this species within City limits.
Perognathus longimembris brevinasus Los Angeles pocket mouse	Fed: None CA: CSC	Occurs in lower elevation grasslands and coastal sage scrub communities in and around the Los Angeles Basin. Prefers open ground with fine sandy soils. May not dig extensive burrows, but instead will seek refuge under weeds and dead leaves instead.	No	**Present.** This species is known to occur within City limits.

Table 5.3-2 Potentially Occurring Sensitive Wildlife Species*

Scientific Name **Common Name**	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Taxidea taxus American badger	Fed: None CA: CSC	Primarily occupy grasslands, parklands, farms, tallgrass and shortgrass prairies, meadows, shrub-steppe communities and other treeless areas with sandy loam soils where it can dig more easily for its prey. Occasionally found in open chaparral (with less than 50% plant cover) and riparian zones.	No	**Low.** There is little if any suitable habitat for this species within City limits.

* Analysis taken from Michael Baker International, 2015

Listing Status

Federal	**State**
E – Endangered	E – Endangered
T – Threatened	T – Threatened
	CE – Candidate Endangered
	CSC – California Species of Concern
	WL – Watch List

Delhi Sands Flower-Loving Fly (DSF)

This relatively large insect historically occurred in an area approximately 40 square miles in northwestern Riverside and San Bernardino Counties. The habitat for this endangered fly is limited to areas containing Delhi fine sand, an aeolian soil type. DSF requires these soils for egg laying, and disturbances to these soils, particularly for agriculture and urban development, are the primary causes of this species' decline. DSF forages on the nectar of several plant species but is often associated with a sparse cover of California buckwheat, California croton, telegraph weed (*Heterotheca grandiflora*), and other species. Suitable habitat for DSF is located along the City's southern boundary in the Jurupa Hills, particularly along the southern terminus of Poplar Avenue and along the northern Jurupa Hills between Citrus and Sierra Avenues, where the 30.9-acre Jurupa Hills Conservation Site and the 11.8-acre Mary Vagle Conservation Site, respectively, have been set aside as preserves specifically for this species under USFWS Biological Opinion (BO) FWS-SB-1788.9. DSF is known to occur in the City and should be considered present in south Fontana on the conservation sites.

Coast Horned Lizard

The coast horned lizard is designated by the CDFW as a California species of special concern. It ranges throughout coastal California and Baja California. It is most often found in chaparral, sage scrub, oak woodland, and coniferous forest, often in sandy washes or amongst shrubby vegetation that it can use for cover, especially where harvester ants (*Pogonomyrmex* spp.) are found. The activity period for adults typically begins in March when males emerge from brumation, ending in September when females retreat; hatchlings are born beginning in late July and will stay active until November. Horned lizards bury themselves in the sand during periods of inactivity. Coast horned lizard is known to occur in the City and should be considered present. This species is most likely to occur in north Fontana in chaparral, RSS, RAFSS, and grassland habitat, as well as in the RSS habitat of the Jurupa Hills in south Fontana.

Silvery Legless Lizard

Silvery legless lizard is designated by the CDFW as a California species of special concern. It ranges from the Bay Area south into Baja California, and from the Pacific Coast east into the West Mojave Desert. It typically occurs in sand or sandy-loam soils, sometimes those with gravel, stones, or boulders mixed in, and usually with leaf litter on top. Soil moisture is crucial. Most of their lives are spent underground, where they use heat from surrounding sand and soil to warm themselves. Preferred temperatures are between 68°F and 77°F, with inactivity occurring below 55°F and death at above 93°F. Young are born between September and November. There may be suitable habitat for this species along drainages leaving the San Gabriel Mountains. Within City boundaries, silvery legless lizard has a moderate potential to occur, particularly around riparian corridors that are more likely to retain subsurface moisture. These areas occur primarily in north Fontana in the drainages coming out of the San Gabriel Mountains.

Orange-Throated Whiptail

Orange-throated whiptail is designated by the CDFW as a species of special concern. It occurs in open sage scrub or chaparral in loose soils and occasional rocky areas. It is known to occur in Orange, western Riverside, and southwestern San Bernardino Counties. This species has a moderate potential to occur in particularly in RSS in the Jurupa Hills but also in chaparral in the San Gabriel Mountains.

Red-Diamond Rattlesnake

The red-diamond rattlesnake is designated by the CDFW as a California species of special concern. It is generally present in Orange, Riverside, and San Diego Counties, with small extensions into Los Angeles, San Bernardino, and Imperial Counties. This species is generally found in pristine coastal sage scrub, chaparral, pinyon-juniper woodlands, and desert. It may be active throughout the year, but peak activity times are between April and October or November, particularly between April and June. Breeding typically occurs from March to May, with young born in August and September. Within City boundaries, there is suitable habitat for

red-diamond rattlesnake to occur in RSS and chaparral in north and south Fontana in the San Gabriel Mountains and Jurupa Hills, respectively.

Burrowing Owl

The burrowing owl is designated by the CDFW as a California species of special concern. It is a grassland specialist distributed throughout western North America where it occupies open areas with short vegetation and bare ground within shrub, desert, and grassland environments. Burrowing owls use a wide variety of arid and semi-arid environments with well-drained, level to gently-sloping areas characterized by sparse vegetation and bare ground. They are dependent upon the presence of burrowing mammals (such as ground squirrels) to establish roosting and nesting habitat. The presence or absence of colonial mammal burrows is often a major factor that limits the presence of burrowing owls. Where mammal burrows are scarce, burrowing owls have been found occupying man-made cavities, such as buried and non-functioning drain pipes, stand-pipes, and dry culverts. Small mammals may also burrow beneath rocks and debris or large, heavy objects such as abandoned cars, concrete blocks, or concrete pads. This species requires open vegetation allowing line-of-sight observation of the surrounding habitat to forage as well as watch for predators. The burrowing owl nesting season generally extends from mid-March to the end of August. Burrowing owl is known to be a year-round resident in the City and in adjacent areas and should be considered present. It is most likely to occur in the northern portion of the City where there are extensive open grasslands, as well as along a series of flood control basins along Etiwanda Avenue and in many of the vacant lots throughout the City.

Golden Eagle

Golden eagle is designated by the CDFW as both a fully protected and watch list species. Golden eagles are year-round residents of southern California that prefer open habitats of the deserts, mountains, foothills, and plains. While it may occur in woodland-brushlands and coniferous forests, it typically avoids heavily forested areas. Their nests are most often located in isolated areas, either on cliff ledges or in large, solitary trees (e.g., eucalyptus trees) and occasionally in utility structures. The golden eagle nesting season typically extends from late March to the end of August. Golden eagles are known to be a year-round resident in and adjacent to the City, where it has been previously observed foraging along I-15 in grasslands and RAFSS habitat at the base of the San Gabriel Mountains. The Jurupa Hills may also provide suitable foraging habitat. This species should be considered to be intermittently present within City boundaries, primarily in open, natural communities along I-15 and in the Jurupa Hills.

Cooper's Hawk

Cooper's hawk is designated by the CDFW as a species of special concern. This species is often seen in wooded urban areas and native woodland communities. Preferred nesting habitats include oak and riparian woodlands dominated by sycamores and willows. Suitable foraging habitat for this bird can be found throughout the City of Fontana. Cooper's hawks prey on small birds and rodents that live in woodland and occasionally scrub and chaparral communities. This

species is well-adapted to urban environments. Cooper's hawk is known to be a year-round resident in the City and should be considered to be present throughout the City, particularly where ornamental woodlands abut non-developed habitat.

Swainson's Hawk

Swainson's hawk is listed as threatened under the California Endangered Species Act. Except for within the Antelope Valley, it is strictly a migrant in southern California, only passing through on its migration between North America and South America. During migration, this species can often be found using grasslands or agricultural fields for foraging, as well as manmade structures and trees for perching or overnight roosting. Swainson's hawks typically pass through southern California on their spring migration from mid-March to May (though may sometimes start in early March) and on their fall migration from mid-August to early October (though may be as extreme as late July to late October). Swainson's hawk has been documented passing through Fontana and its general vicinity (especially Glen Helen Regional Park) on numerous occasions in recent years and has a high potential to occur in or adjacent to the City as a transitory migrant with possible brief stopovers. It is most likely to occur in north Fontana where high winds can provide soaring conditions for migrating birds. Suitable foraging habitat is present in the northern portion of the City where there are large open grasslands. This species would only occur in the City during its migration and would not stay for any appreciable amount of time.

Northern Harrier

Northern harrier is designated by the CDFW as a species of special concern. This species is a year-round resident of southern California. It nests on the ground in open areas such as grasslands and agricultural fields. It also forages in these habitats but also forages in areas with low-growing shrubs such as RSS. Northern harrier is known to occur in the City and should considered present, particularly in open habitat in north Fontana including grasslands, RSS, chaparral, and RAFSS, as well as in south Fontana in the Jurupa Hills.

Loggerhead Shrike

The loggerhead shrike is designated by the CDFW as a California species of special concern. It is generally a year-round resident throughout the southern United States and a summer resident throughout much of the northern United States. Typical habitat preferences include open countryside with short vegetation, especially areas that have perches with expansive viewpoints, including pastures, old orchards, roadsides, cemeteries, golf courses, agricultural fields, riparian areas, and open woodlands. The nesting season is generally from the beginning of February through the end of July. Loggerhead shrikes are known to be year-round residents in the City and in adjacent areas and should be considered present, particularly in natural areas with open space and shrubs for perching and nesting. It is most likely to occur in north Fontana in the RAFSS habitat.

Coastal California Gnatcatcher

Coastal California gnatcatcher (CAGN) is a federal threatened subspecies of the California gnatcatcher and is designated by the CDFW as a California species of special concern. It is the only subspecies of California gnatcatcher in southern California and is a year-round resident. This species is strongly associated with coastal sage scrub, but in the nonbreeding season it will expand its home range and utilize adjacent chaparral and riparian habitat, particularly to help with fledgling dispersal. It prefers communities dominated by California sagebrush. It generally occurs below 750 feet in elevation along the coast and below 1,500 feet in inland areas. The general nesting season extends from the beginning of March through mid-August. Suitable habitat for CAGN is present in both the northern and southern City limits where RSS grows in the San Gabriel Mountains and Jurupa Hills, respectively. CAGN is known to be a year-round resident in the City and should be considered present in south Fontana in the Jurupa Hills, with a low potential to occur in the RSS, chaparral, and RAFSS habitats of north Fontana.

California Horned Lark

The California horned lark is designated by the CDFW as a California watch list species. While horned larks are year-round residents throughout most of the United States and Mexico and breeding residents in much of Canada, the "California" subspecies only occurs west of the coastal ranges of California and northern Baja California. Horned larks generally occur in open areas, most often in shortgrass habitats or areas characterized by other low-growing vegetation. They may be found in disturbed, ruderal areas or even on manicured lawns (e.g., city parks and baseball fields). The horned lark breeding period generally extends from mid-February to mid-August. This species was observed during Michael Baker's 2015 vegetation mapping and should be considered present. Within City boundaries, it is most likely to be found in open non-native grasslands and disturbed fields.

Yellow Warbler

The yellow warbler is designated by the CDFW as a California species of special concern. This designation applies jointly to the ***brewsteri*** subspecies, which occurs along the Pacific Coast from northern Baja California to south of Victoria Island in Washington, and the ***morcomi*** subspecies, which occurs from southeast British Columbia down the western U.S. and into northern Baja California. This species is a summer migrant to southern California, inhabiting riparian woodlands throughout southern California. This species typically retreats to montane habitats for breeding, although some individuals will remain in lowland areas. The yellow warbler nesting period generally extends from mid-March to early August. There is suitable habitat for this species in the northern limits of the City, where riparian drainages exit the San Gabriel Mountains. Yellow warbler has a moderate potential to occur, primarily in north Fontana along the riparian drainages coming out of the San Gabriel Mountains.

Southern California Rufous-Crowned Sparrow

Southern California rufous-crowned sparrow is designated by the CDFW as a watch list species. Its primary habitat consists of moderate to steep slopes covered in relatively open coastal sage scrub, with grasses and rocks interspersed throughout. It can also be found in chaparral or in canyons. Dense stands of sage scrub and chaparral are typically avoided. Rufous-crowned sparrow nests either on the ground, in a depression in the ground, or very low in bushes (up to 45 cm off the ground). In most cases nests are built underneath bunchgrass or shrubs, though they can also be constructed under rock overhangs. This subspecies breeds from late February or early March until early September. Southern California rufous-crowned sparrow is known to be a year-round resident in the City and should be considered present in south Fontana in the Jurupa Hills.

Bell's Sparrow

Bell's sparrow is designated by the CDFW as a watch list species. Though the bird was formerly a subspecies of the sage sparrow called Bell's sage sparrow, it is presumed that it is still placed on the CDFW watch list as a distinct species (the split in taxonomy has not yet been recognized by CDFW). It is most often found in coastal lowlands, inland valleys, and in foothills. In its northern range in California this species is generally found in dense chamise chaparral but can also be found in coastal scrub and in brushy washes. On the other hand, in its southern range it can typically be found in stands of big sagebrush (*Artemisia tridentata*) in high-elevation mountain ranges. Nests are typically constructed within shrubs. Bell's sparrow is known to be a year-round resident within the City and should be considered present in RSS and chaparral in north and south Fontana in the San Gabriel Mountains and Jurupa Hills, respectively, as well as in the RAFSS habitat in north Fontana.

San Diego Black-tailed Jackrabbit

The San Diego black-tailed jackrabbit is designated by the CDFW as a California species of special concern. Its distribution is restricted to the coastal side of the Transverse Ranges between Los Angeles and San Diego Counties. Typical habitat includes arid areas with shortgrass vegetation, RSS, RAFSS, chaparral, disturbed areas, and agriculture, as well as occasionally near willow scrub or juniper woodlands. Breeding can occur generally throughout the entire year, particularly in the more southerly regions of the species' range. Within City boundaries, San Diego black-tailed jackrabbit has a high potential to occur in areas that contain sage scrub species, particularly in north Fontana along the base of the San Gabriel Mountains and in south Fontana in the Jurupa Hills.

San Bernardino Kangaroo Rat

SBKR is listed as endangered under the Endangered Species Act and is designated by the CDFW as a species of special concern. It is one of several kangaroo rat species that could occur within the City's vicinity, which is no longer subject to the required fluvial (water) processes to support much of the habitat that these species require. SBKR habitat is described as being confined to primary and secondary alluvial fan scrub habitats, with sandy soils deposited by fluvial rather than aeolian (wind) processes. Burrows are dug in loose soil, usually near or beneath shrubs. The historic drainage system in the northern portion of the City has been historically altered as a result of flood control efforts. This has resulted in a reduction in both the amount and quality of SBKR habitat.

The City appears to contain some suitable habitat for SBKR and is within designated Critical Habitat for the species (72 FR 72010 72213) but does not offer sufficient quantity and quality of habitat needed for the long-term preservation of the species. Fontana, which was historically subject to alluvial processes, no longer receives such floodwaters as flood control infrastructure has been constructed protect the area from the hydrological processes of nearby fluvial systems. Currently, there is no evidence of any active hydrologic processes in the area although suitable habitat for SBKR remains (primarily in the northern portion of the city where there is still somewhat extensive and relatively undisturbed RAFSS habitat present). Although a single SBKR was trapped in 2002, several dozen surveys since that time have been negative for this species. SBKR has a low potential to occur within City boundaries but, if present, it is most likely to occur in RAFSS habitat.

San Diego Desert Woodrat

The San Diego desert woodrat is designated by the CDFW as a California species of special concern. Its distribution is restricted to the coastal side of the Transverse Ranges between San Luis Obispo and San Diego Counties. This species is associated with a variety of arid shrub and desert habitats, particularly those with rock outcrops, boulders, cacti, or areas of dense undergrowth or large shrubs around which to build middens. The most common habitats used include chaparral, coastal sage scrub, and grassland, although oak woodlands and pinyon-juniper woodlands may be used as well. Breeding can evidently occur year-round, though it appears to peak between November and April. Within City boundaries, San Diego desert woodrat has a moderate potential to occur in areas that contain sage scrub species, particularly in north Fontana along the base of the San Gabriel Mountains and in south Fontana in the Jurupa Hills.

Southern Grasshopper Mouse

The southern grasshopper mouse is designated by the CDFW as a California species of special concern. It is found generally throughout the entire southern half of California, although it is absent along the Central Coast. Habitat preferences include alkali desert scrub, desert washes, riparian areas, coastal scrub, and mixed chaparral, preferentially areas with low to moderate

shrub cover. Breeding can occur year-round but generally peaks between May and July. Within City boundaries, southern grasshopper mouse has a moderate potential to occur in areas that contain sage scrub species, particularly in north Fontana along the base of the San Gabriel Mountains and in south Fontana in the Jurupa Hills.

Los Angeles Pocket Mouse

The Los Angeles pocket mouse is designated by the CDFW as a California species of special concern. Its current range has changed little from its historic distribution, as it is still known from the Etiwanda Wash east to Cabazon and south through the San Jacinto and Temecula Valleys to Aguanga, Warner Pass, Vail, and Temecula. Historically it was also known in the San Fernando Valley and may still occur in un-surveyed areas. This species occurs in low elevation grasslands, alluvial sage scrub, and coastal sage scrub, particularly areas with fine, sandy soils. It hibernates between October and February. The breeding period generally extends throughout the non-dormant period. Los Angeles pocket mouse is known to occur in the City within the wash along Etiwanda Avenue and should be considered present.

Northwestern San Diego Pocket Mouse

Northwestern San Diego pocket mouse is designated by the CDFW as a species of special concern. This small rodent prefers open, sandy areas in the valleys and foothills or southwestern California. Typical habitat includes sage scrub, sage scrub/grassland ecotones, and chaparral, often where there are gravelly or rocky substrates. The breeding season reaches its peak in spring and early summer. Its range extends from Orange County to San Diego County and includes portions of Riverside and San Bernardino Counties. Northwestern San Diego pocket mouse is known to be a year-round resident in the City and should be considered present in north Fontana, primarily in the RAFSS habitat south of I-15.

Western Mastiff Bat

The western mastiff bat is designated by the CDFW as a California species of special concern. Its range in California extends across the entire southern California counties, as well as the Central Coast counties and up the Sierra Nevada. This species is found in a variety of habitats, including desert scrub, chaparral, oak woodland, and coniferous forests; however, the one element that these habitats have in common is the presence of rocky outcrops. Rocky outcrops are imperative for this species for roosting purposes, although it may use cracks in buildings if necessary. Roosting areas must have at least 10 feet of open space underneath for bats to drop out of during flight. Roosting is colonial, with colony sizes being fewer than 100 individuals and in many cases fewer than 20 individuals. Western mastiff bats mate in the spring and give birth to a single young in early to mid-summer, typically by early July. Within City boundaries, there is suitable habitat for western mastiff bat in the northern, open areas of the City, where it has a moderate potential to occur.

5.3.3.3 Sensitive and Critical Habitat

Sensitive Habitat

The CNDDB inventories occurrences of both aquatic and terrestrial sensitive natural communities in California that are extremely high quality, very limited distribution, or threatened. The CNDDB identifies five sensitive habitats within the Cucamonga Peak, Devore, Fontana, and Guasti quadrangles: California Walnut Woodland, Coastal and Valley Freshwater Marsh, RAFSS, Southern Riparian Forest, and Southern Sycamore Alder Riparian Woodland. California Walnut Woodland, RAFSS, and Southern Sycamore Alder Riparian Woodland all occur in the northern portion of the City, in the open space of the foothills of the San Gabriel Mountains. RAFSS is generally present north of Summit Avenue and east of Citrus Avenue, while California Walnut Woodland and Southern Sycamore Alder Riparian Woodland are both present at the base of the San Gabriel Mountains and further north.

Critical Habitat

Within City boundaries, USFWS-designated Critical Habitat occurs for SBKR and coastal California gnatcatcher. SBKR Critical Habitat is present in the foothills of the San Gabriel Mountains in the northern portion of the City, and costal California gnatcatcher Critical Habitat is present in the Jurupa Hills in the southern portion of the City. Other Critical Habitat in the vicinity of the Planning Area includes that for mountain yellow-legged frog (*Rana muscosa*) in Day Canyon Wash and its tributaries in the San Gabriel Mountains approximately 3 miles to the west-northwest of the City and for southwestern willow flycatcher (*Empidonax traillii extimus*) and Santa Ana sucker (*Catostomus santaanae*) along the Santa Ana River approximately two miles to the east-southeast of the City.

5.3.4 Wildlife Movement and Migratory Routes

Habitat linkages provide links between larger habitat areas that are separated by development. Wildlife corridors are similar to linkages but provide specific opportunities for animals to disperse or migrate between areas. A corridor can be defined as a linear landscape feature of sufficient width to allow animal movement between two comparatively undisturbed habitat fragments. Adequate cover is essential for a corridor to function as a wildlife movement area. It is possible for a habitat corridor to be adequate for one species yet, inadequate for others. Wildlife corridors are significant features for dispersal, seasonal migration, breeding, and foraging. Additionally, open space can provide a buffer against both human disturbance and natural fluctuations in resources.

Historically, the City provided movement in both north-south and east-west directions. The land within the City of Fontana provided a connection between the nearby San Bernardino and San Gabriel Mountains to the Chino Basin in the south. The City also sits along the eastern portion of the San Gabriel Mountains. This area supports wildlife movement along the mountain foothills to the western portion of the San Gabriel Mountains, as well as access to the San Bernardino

Mountains. Currently, the City of Fontana is mostly developed, with most of the land converted from open space areas to commercial, industrial, residential, and recreational uses. Wildlife movement on a north-south regional basis has ceased due to the development of the valley floor.

Wildlife movement in an east-west orientation along the foothills north of I-15 is still a viable wildlife corridor. Although the Jurupa Hills provide habitat for many species of plants and animals, they function as an ecological island, allowing no significant movement except as stepping stones between fragmented natural areas to the south in Riverside County and San Bernardino County to the north. Habitat in Riverside County is managed under the Western Riverside County Multiple Species Habitat Conservation Plan. The majority of the habitat in the City is extensively developed and major wildlife movement within the City is not likely to occur.

5.3.5 Wetlands and Riparian Habitat

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The U.S. Army Corps of Engineers (USACE) Regulatory Branch regulates discharge of dredge and/or fill materials into "waters of the United States" pursuant to Section 404 of the Federal *Clean Water Act* (CWA) and Section 10 of the Rivers and Harbors Act. Of the State agencies, the CDFW regulates alterations to streambed and associated plant communities pursuant to Section 1602 of the Fish and Game Code, and the Regional Board regulates discharges into surface waters pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

The City contains at least five areas determined to be "waters of the U.S." and/or "waters of the State" and areas of wetlands (Michael Brandman Associates, 2003). These areas fall under the jurisdiction of the USACE and/or CDFW. Additionally, areas of CDFW jurisdictional riparian resources occur within the City. There are three main drainage features flowing from the foothills in the northern section of the City and two or three small drainages in the south, which flow from the Jurupa Hills. Within the developed areas are two main drainage features, which have been modified for flood control purposes. Flood control and water conservation basins also occur within the City, and ultimately aid in the eventual movement of waters toward the Santa Ana River.

5.3.6 Planning and Regulatory Framework

A variety of federal, State, and local regulations address sensitive plants and wildlife resources. These plans and programs have been enacted through federal, State, and local action, and are administered by agencies and special districts. The following paragraphs summarize the regulatory context that biological resources are managed within the Planning Area.

5.3.6.1 Federal Regulations

Federal Endangered Species Act

Federal *Endangered Species Act* provisions protect federally listed threatened and endangered species and their habitats from unlawful take and ensure that federal actions do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Under the ESA, "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct." The USFWS regulations define harm to mean "an act which actually kills or injures wild-life." Such an act "may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 CFR § 17.3). Critical habitat is defined in Section 3(5)(A) of the ESA as "(i) the specific areas within the geographical area occupied by the species on which are found those physical or biological features (I) essential to the conservation of the species, and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species upon a determination by the Secretary of Commerce or the Secretary of the Interior (Secretary) that such areas are essential for the conservation of the species." The effects analyses for designated critical habitat must consider the role of the critical habitat in both the continued survival and the eventual recovery (i.e., the conservation) of the species in question, consistent with the recent Ninth Circuit judicial opinion, Gifford Pinchot Task Force v. USFWS. Activities that may result in "take" of individuals are regulated by the USFWS. The USFWS produced an updated list of candidate species December 6, 2007 (72 FR 69034). Candidate species are not afforded any legal protection under ESA; however, candidate species typically receive special attention from Federal and State agencies during the environmental review process.

Migratory Bird Treaty Act

The *Migratory Bird Treaty Act* (MBTA) of 1918 (16 U.S.C. 703-711) makes it unlawful to possess, buy, sell, purchase, barter or "take" any migratory bird listed in Title 50 of the Code of Federal Regulations Part 10. "Take" is defined as possession or destruction of migratory birds, their nests or eggs. Disturbances that cause nest abandonment and/or loss of reproductive effort or the loss of habitats upon which these birds depend may be a violation of the MBTA. The MBTA prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary. This act encompasses whole birds, parts of birds, and bird nests and eggs.

Bald and Golden Eagle Protection Act of 1940 (16 USC 668)

The Bald Eagle Protection Act of 1940 (16 U.S.C. 668, enacted by 54 Stat. 250) protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. Take of bald and golden eagles is defined as follows: "disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a

decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior'' (72 FR 31132; 50 CFR 22.3).

The USFWS is the primary federal authority charged with the management of golden eagles in the United States. Should pre-construction surveys demonstrate that golden eagles are utilizing the Project site or vicinity for nesting and/or foraging, a permit for take of golden eagles, including take from disturbance such as loss of foraging habitat, may be required for this Project. USFWS guidance on the applicability of current Eagle Act statutes and mitigation is currently under review. On November 10, 2009, the USFWS implemented new rules (74 FR 46835) governing the "take" of golden and bald eagles. The new rules were released under the existing Bald and Golden Eagle Act which has been the primary regulation protection unlisted eagle populations since 1940. All activities that may disturb or incidentally take an eagle or its nest as a result of an otherwise legal activity must be permitted by the USFWS under this act. The definition of disturb (72 FR 31132) includes interfering with normal breeding, feeding, or sheltering behavior to the degree that it causes or is likely to cause decreased productivity or nest abandonment. If a permit is required, due to the current uncertainty on the status of golden eagle populations in western United States, it is expected permits would only be issued for safety emergencies or if conservation measures implemented in accordance with a permit would result in a reduction of ongoing take or a net take of zero.

Federally Regulated Habitats

Areas meeting the regulatory definition of "Waters of the U.S." (Jurisdictional Waters) are subject to the jurisdiction of the USACE under provisions of Section 404 of the CWA (1972) and Section 10 of the *Rivers and Harbors Act* (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as "Waters of the U.S.," tributaries of waters otherwise defined as "Waters of the U.S.," the territorial seas, and wetlands (termed Special Aquatic Sites) adjacent to "Waters of the U.S." (33 CFR, Part 328, Section 328.3). Wetlands on non-agricultural lands are identified using the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987). The BSA falls within the South Pacific Division of the USACE and is under the jurisdiction of the Los Angeles District.

Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill into such waters must comply with permit requirements of the USACE. No USACE permit would be effective in the absence of State water quality certification pursuant to Section 401 of the CWA. As a part of the permit process the USACE works directly with the USFWS to assess potential Project impacts on biological resources.

5.3.6.2 State Regulations

California Environmental Quality Act

The *California Environmental Quality Act* (CEQA) establishes State policy to prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures. CEQA applies to actions directly undertaken, financed, or permitted by State lead agencies. Regulations for implementation are found in the State CEQA Guidelines published by the Resources Agency. These guidelines establish an overall process for the environmental evaluation of projects.

California Endangered Species Act

Provisions of California Endangered Species Act protect State-listed Threatened and Endangered species. The CDFW regulates activities that may result in "take" of individuals ("take" means "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill"). Habitat degradation or modification is not expressly included in the definition of "take" under the California Fish and Game Code. Additionally, the California Fish and Game Code contains lists of vertebrate species designated as "fully protected" (California Fish & Game Code §§ 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], 5515 [fish]). Such species may not be taken or possessed.

In addition to Federal and State-listed species, the CDFW also has produced a list of Species of Special Concern to serve as a "watch list." Species on this list are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Species of Special Concern may receive special attention during environmental review, but they do not have statutory protection.

Birds of prey are protected in California under the State Fish and Game Code. Section 3503.5 states it is "unlawful to take, possess, or destroy any birds of prey (in the order Falconiformes or Strigiformes) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by the CDFW. Under Sections 3503 and 3503.5 of the State Fish and Game Code, activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory nongame bird as designated in the *Migratory Bird Treaty Act*, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the *Migratory Bird Treaty Act*, or the taking of any non-game bird pursuant to Fish and Game Code Section 3800 are prohibited.

Native Plant Protection Act (Fish & Game Code 1900-1913)

California's *Native Plant Protection Act* (NPPA) requires all State agencies to utilize their authority to carry out programs to conserve endangered and rare native plants. Provisions of NPPA prohibit the taking of listed plants from the wild and require notification of the CDFW at least 10 days in advance of any change in land use. This allows CDFW to salvage listed plant species that would otherwise be destroyed. The Applicant is required to conduct botanical inventories and consult with CDFW during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

Natural Community Conservation Planning Act

The Natural Community Conservation Planning (NCCP) program of the CDFW takes a broad-based ecosystem approach to planning for the protection and perpetuation of biological diversity. The NCCP program, established pursuant to the 1991 NCCP Act (Fish and Game Code 2003) is broader in its orientation and objectives than the CESA or FESA. While the CESA and FESA are designed to identify and protect species that have already declined significantly in numbers, the NCCP program seeks to prevent species listing by focusing on the long-term stability of wildlife and plant communities.

Section 1602 of the Fish and Game Code

Sections 1600-1603 of the California Fish and Game Code (CFGC) regulates all diversions, obstructions, or changes to the natural flow of bed, channel, or bank of any river, stream, or lake, which supports fish and wildlife. "Substantial" modifications to such water bodies that result in modifications to the bed, bank or associated riparian areas or flows within waters bodies require that a Notification for Lake or Streambed Alteration Agreement (LSAA) be provided to CDFW in procurement of a Section 1602 permit.

Section 3503 & 3503.5 of the Fish and Game Code

Under these sections of the Fish and Game Code, the Applicant is not allowed to conduct activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory non-game bird as designated in the *Migratory Bird Treaty Act*, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the *Migratory Bird Treaty Act*, or the taking of any non-game bird pursuant to Fish and Game Code Section 3800.

Porter-Cologne Water Quality Control Act

Regional water quality control boards regulate the "discharge of waste" to "waters of the State." All projects proposing to discharge waste that could affect waters of the State must file a waste discharge report with the appropriate regional board. The board responds to the report by issuing waste discharge requirements (WDR) or by waiving WDRs for that project discharge. Both of the terms "discharge of waste" and "waters of the State" are broadly defined such that

discharges of waste include fill, any material resulting from human activity, or any other "discharge." Isolated wetlands within California, which are no longer considered "waters of the United States" as defined by Section 404 of the CWA, are addressed under the Porter-Cologne Act.

State-Regulated Habitats

The State Water Resources Control Board is the State agency (together with the Regional Water Quality Control Boards [RWQCB]) charged with implementing water quality certification in California. The Project falls under the jurisdiction of the Colorado River (Region 7) RWQCB.

The CDFW extends the definition of stream to include "intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (USGS defined), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife" (CDFW 1994).

Activities that result in the diversion or obstruction of the natural flow of a stream; or which substantially change its bed, channel, or bank; or which utilize any materials (including vegetation) from the streambed, may require that the project applicant enter into a Streambed Alteration Agreement with the CDFW.

California Land Conservation Act

California State Legislature enacted the ***California Land Conservation Act*** in 1965. Also known as the "***Williamson Act***," it aims to preserve State agricultural lands and minimize conversion to non-agricultural uses. The ***Williamson Act*** also created an agricultural preserve contract system that allows local jurisdictions to enforce a reduced-rate tax on landowners, dependent upon land value for current uses instead of unrestricted market value. By signing a ***Williamson Act*** contract, landowners agree to retain their land as agricultural for at least ten years. Contracts are renewed automatically unless a landowner files for non-renewal with the County.

5.3.6.3 Local Regulations

City of Fontana Zoning and Development Code

Sec. 30-273 of Article VIII. – Public and Open Space Zoning Districts – dictates the following protections for biological resources:

(a) Biological resources. Areas containing significant biological habitat, as identified in the general plan, shall be preserved and protected.

(b) Water resources. Groundwater recharge areas and natural drainage courses shall be protected.

(c) Grading and landform. If any grading is required, natural terrain shall be incorporated into grading plans. The amount of terrain alteration shall be minimized. Significant topographic features shall be preserved. No grading or development shall be permitted on hilltops. Views to the San Gabriel, San Bernardino, and San Jacinto Mountains, and Jurupa Hills shall be protected across the City through building height and setback regulations.

(d) Natural flood control. Wherever possible, natural flood control features such as swales and vegetated drainage courses shall be maintained.

City of Fontana Ordinance No. 1464

In 2004, the City commissioned the preparation of a MSHCP to address the listed and sensitive species issues in the North Fontana Conservation Program Area, including potential development impacts to RAFSS and RSS and special status species with the potential to occur in the area such as coastal California gnatcatcher, SBKR, and Los Angeles pocket mouse. To uphold the intent of the MSHCP during its preparation, the City Council approved Ordinance No. 1464 on December 7, 2004. This "Interim MSHCP" policy established a tiered development mitigation fee for projects within the subject area. Fees collected would finance a conservation program to compensate for the loss of RAFSS and RSS habitats through the purchase, preservation, and management of nearby conservation lands.

5.3.6.4 Other Applicable Regulations, Plans, and Standards

California Native Plant Society Rare Plant Program

The mission of the CNPS Rare Plant Program is to develop current, accurate information on the distribution, ecology, and conservation status of California's rare and endangered plants, and to use this information to promote science-based plant conservation in California. Once a species has been identified as being of potential conservation concern it is put through an extensive review process. Once a species has gone through the review process, information on all aspects of the species (listing status, habitat, distribution, threats, etc.) are entered into the online CNPS Inventory and given a CRPR, a designation that the CNPS officially changed from "CNPS List" in 2011. The Program currently recognizes more than 1,600 plant taxa (species, subspecies and varieties) as rare or endangered in California.

Vascular plants listed as rare or endangered by the CNPS, but which might not have designated status under State endangered species legislation, are defined by the following CRPR:

- CRPR 1A - Plants considered by the CNPS to be extinct in California
- CRPR 1B - Plants rare, threatened, or endangered in California and elsewhere
- CRPR 2 - Plants rare, threatened, or endangered in California, but more numerous elsewhere
- CRPR 3 - Plants about which we need more information – a review list
- CRPR 4 - Plants of limited distribution – a watch list

In addition to the CRPR designations above the CNPS adds a Threat Rank as an extension added onto the CRPR and designates the level of endangerment by a 1 to 3 ranking, with 1 being the most endangered and 3 being the least endangered and are described as follows:

- 0.1 – Seriously threatened in California (high degree/immediacy of threat)
- 0.2 – Fairly threatened in California (moderate degree/immediacy of threat)
- 0.3 – Not very threatened in California (low degree/immediacy of threats or no current threats known

5.3.7 Thresholds of Significance

For the purposes of this analysis, implementation of the General Plan Update may have a potentially significant impact if it were to result in any of the following:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.
- 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 CDFW or USFWS.
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- 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.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted Habitat Conservation Program (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan.

It should be noted that this analysis is conducted as part of the Program EIR for the General Plan Update. Therefore, site-specific, case-by-case analyses of project impacts to biological resources shall be completed as specific development is proposed in the future.

5.3.8 Environmental Impacts

The General Plan Update includes goals, policies, and actions that could reduce impacts to biological resources by preserving native habitat that remains within the Planning Area and creating and maintaining other areas of open space, such as large public parks, that may be used by wildlife. Applicable Goals, Policies, and Actions include the following:

Table 5.3-3 Applicable Goals, Policies, and Actions

Goals & Policies	Action
Conservation, Open Space, Parks, and Trails Element	
Goal 1: Fontana continues to preserve sensitive natural open space in the foothills of the San Gabriel Mountains and Jurupa Hills.	
• Consider permanent protection for sensitive foothill lands through potential partnership with conservation organizations or acquisition and deed restrictions.	A. Evaluate the potential costs and benefits of permanent protection of sensitive foothill lands. B. Work with regional conservation organizations, such as the Inland Empire Resource Conservation District and regional conservation land trusts, to conserve sensitive foothill lands.
Goal 2: Large city parks and open spaces include plantings and natural areas attractive to birds and other wildlife.	
• Inform the public about the natural ecological character of Fontana. • Use public open space to support wildlife habitat where appropriate.	A. Design parks and landscaped public spaces to include plantings attractive to birds and other regional wildlife. B. In large parks, create natural areas with educational information to raise public awareness about local environments. C. Consider wildlife value when landscaping public spaces.
Goal 4: The city of Fontana has a no-net-loss policy for public parkland.	
• Establish legal requirements for replacement, when any city-owned park land listed in the California Protected Lands database is transferred to other uses, with land of equivalent environmental, recreational, or aesthetic value.	A. Develop the legal framework and language to pass a no-net-loss ordinance for city-owned park land listed in the California Protected Lands database. B. Research and write an ordinance to require that City-owned public park land (as defined in the ordinance) cannot be transferred or converted to another use without an analysis of alternatives, public hearings, and substitute land of equal value (as defined) being received by the City.

5.3.8.1 Impact Analysis – Direct and Indirect Effects

CEQA defines direct impacts as those impacts that result from a project and occur at the same time and place. These include but are not limited to the removal of vegetation and disturbance to wildlife from construction activities. Indirect impacts are caused by a project but can occur later in time or are farther removed in distance while still reasonably foreseeable and related to the project. Indirect impacts can include the disruption of the native seed bank, the spread of invasive plant species the disruption of prey base or increased predation through alterations of the physical landscape from project features (i.e., site preparation) that provide perch sites or shelter from predators. Indirect impacts may also include increased traffic and human disturbance related to maintenance of the new structures. General impacts to plants and wildlife are summarized in Table 5.3-3.

Table 5.3-4 Construction and Operational Impacts to Plants and Wildlife

Activity	Impacts
Earth moving, grading, habitat/vegetation removal	• Direct mortality to plants and small or less mobile species • Crushing of burrows or fossorial animals, disruption of soil surfaces, compaction of soils, and displacement of native species • Reduced use of area as a foraging or movement corridor • Fugitive dust and habitat loss • Creation of barriers disrupting movement • Displacement of breeding birds and the abandonment of active nests (during breeding season) • Loss of eggs and nestlings including ground nesting birds • Loss of foraging habitat • Brush fires • Spread of exotic weeds
Noise and vibration	• Interference with breeding or foraging activities and movement patterns • Avoidance of areas during construction • Interference with hearing resulting in increased predation • Abandonment of burrows or habitat
Man-made sources of light	• Disturbance or mortality to species that prey on insects attracted to light sources • Collisions with vehicles at night
Traffic	• Accidental mortality of small diurnal animals from vehicle collision • Secondary vehicular mortality of opportunistic predators feeding on road kill
Waste	• Ingestion of microtrash (i.e., broken glass, paper and plastic waste, and small pieces of metal) or fluids leaking from construction vehicles

Project impacts are generally considered permanent if they involve the conversion of land to a new use, such as with the construction of buildings and infrastructure. Temporary impacts are usually considered to be those activities that are of short duration (i.e., six to 12 months) and that do not result in a permanent land use conversion. Temporary project impacts are those effects that include ground disturbance activities restricted solely to the construction phase, such as trimming of vegetation, grading of temporary roads and clearing vegetation within staging areas. These effects would be considered temporary provided the areas are subject to restoration at the conclusion of construction. Noise, human disturbance, vehicle traffic, and construction activities are also considered temporary impacts.

Operational impacts include both direct and indirect impacts to biological resources. Ongoing operations and maintenance impacts would occur during routine inspection and maintenance of new facilities. Operational impacts would also include activities such as weed abatement and vegetation management activities, including but not limited to mechanical removal or mowing, hand removal, or herbicide treatment. These types of impacts may remain an ongoing source of disturbance for many plants and wildlife species that occur.

Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS?

Based on known recent distribution records, two sensitive plant species have been documented within the City of Fontana: Plummer's mariposa lily and Parry's spineflower. Based on habitat requirements for specific species and the availability and quality of habitats present, it was determined that there is a moderate potential for an additional three sensitive plant species to occur within City limits: mesa horkelia, Robinson's pepper-grass, and short-joint beavertail.

Based on known distribution records and/or direct observation, 13 sensitive wildlife species are known to regularly occur within the City of Fontana boundaries and are assumed to be present. These include: DSF, coast horned lizard, Cooper's hawk, southern California rufous-crowned sparrow, golden eagle, Bell's sparrow, burrowing owl, northern harrier, California horned lark, loggerhead shrike, coastal California gnatcatcher, northwestern San Diego pocket mouse, and Los Angeles pocket mouse. Based on habitat requirements for specific species and the availability and quality of habitats present, it was determined that there is a moderate or high potential for nine additional sensitive wildlife species to occur. These include: silvery legless lizard, orange-throated whiptail, red-diamond rattlesnake, Swainson's hawk, yellow warbler, western mastiff bat, San Diego black-tailed jackrabbit, San Diego desert woodrat, and southern grasshopper mouse.

Impacts to special status species would be considered significant if activities under the proposed General Plan Update result in the development of open space that is known to or has the reasonable potential to function as habitat for special status species. Reasonable potential includes the presence of suitable habitat or relatively recent documentation of presence of special status species.

The northern and southern portions of the City have the most potential to support habitat suitable for special status species due to the presence of open space along the foothills of the San Gabriel Mountains and in the Jurupa Hills. Except for the burrowing owl and nesting raptors or passerine birds, no special status species have the reasonable potential to occupy lands that are subject to the proposed General Plan land use changes.

A potentially significant impact could occur if habitat present in the open spaces of the San Gabriel Mountains or Jurupa Hills were to be degraded by development. Goal 1 of the General Plan Update element governing Conservation, Open Space, Parks, and Trails will ensure that: Fontana continues to preserve sensitive natural open space in the foothills of the San Gabriel Mountains and Jurupa Hills. The policy relative to this goal dictates "considering permanent protection for sensitive foothill lands through potential partnerships with conservation organizations or acquisition and deed restrictions." City actions shall include: a) Evaluating the potential costs and benefits of permanent protection of sensitive foothill lands; and b) Working with regional conservation organizations, such as the Inland Empire Resource Conservation District and regional conservation land trusts, to conserve sensitive foothill lands.

One species of concern that is known to occur in areas that may be affected by the General Plan Update is the burrowing owl. This species is known to nest in existing burrows, culverts, or other appropriately-sized holes on disturbed, vacant, or agricultural lands. Therefore, it could theoretically inhabit any such land in the Planning Area. Any future development of these types of areas could potentially impact this species. Due to this, MM-BIO-1 shall be implemented to reduce the potential impacts to burrowing owls to a less than significant level.

The Planning Area also supports a wide variety of potential nesting habitat for raptors and passerines. Nesting birds can be adversely affected from noise or human activity generated during construction, resulting in decreased reproductive success or abandonment of a nest or an area defined as nesting habitat. Any future development within the Planning Area that resulted in such adverse effects may be considered in violation of the MBTA, which would be considered a significant impact. Due to this, MM-BIO-2 shall be implemented to reduce the potential impacts to nesting birds to a less than significant level.

Would the Project substantially effect any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS.?

The CNDDB identified five sensitive natural communities within the Planning Area: California Walnut Woodland, Coastal and Valley Freshwater Marsh, RAFSS, Southern Riparian Forest, and Southern Sycamore Alder Riparian Woodland. These communities and remaining natural riparian habitat all occur within portions of the San Gabriel Mountains foothills and Jurupa Hills to the north and south of the City, respectively. Temporary or permanent impacts to these habitats as described in Table 5.3-3 would be a significant impact. However, as noted above, Goal 1 of the General Plan Update element governing Conservation, Open Space, Parks, and Trails will protect these areas; therefore, no impact to these sensitive habitats would occur.

Would the Project substantially effect federally protected wetlands as defined by Section 404 of the CWA (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Temporary or permanent impacts as described in Table 5.3-3 to federally protected wetlands as defined by Section 404 of the CWA would be a significant impact. However, based on a review of the USFWS' National Wetlands Inventory online mapper (USFWS 2018) and surveys conducted by Michael Baker International biologists in 2015, no wetlands located within the Planning Area are subject to land use changes. Therefore, Implementation of the proposed General Plan Update would not impact any wetlands as defined by Section 404 of the CWA.

Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Due to development of the valley floor and surrounding the Jurupa Hills, wildlife movement within the Planning Area is limited to an east-west orientation along the foothills of the San Gabriel Mountains north of I-15 (Michael Baker International 2015). Temporary or permanent impacts to such areas as described in Table 5.3-3 would be a significant impact. However, this area will be protected by Goal 1 of the General Plan Update element governing Conservation, Open Space, Parks, and Trails and are not subject to land use changes. Therefore, no impacts would occur.

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

Development allowed by the updated General Plan would be required to comply with proposed General Plan policies and existing City policies related the protection of biological resources. As a result, the General Plan Update would not conflict with any City policies, regulations, or standards designed to protect biological resources.

Would the Project conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan?

No formal HCP exists that includes the Planning Area. However, in 2004, the City commissioned the preparation of a MSHCP to address potential impacts to sensitive RAFSS and RSS habitats and special status species that may occur within the North Fontana Conservation Program Area in the San Gabriel Mountains foothills. To enforce the intent of the upcoming MSHCP during the period of time required for its preparation and adoption, the City Council approved City Ordnance No. 1464 on December 7, 2004. This ordinance established a tiered mitigation fee program for development within the subject area.

As noted above, Goal 1 of the General Plan Update element governing Conservation, Open Space, Parks, and Trails will protect the area encompassed within the North Fontana Conservation

Program Area. In addition, the ordinance stipulates that the payment of mitigation fees pursuant to the policy shall not apply to the adoption or amendment of the City's General Plan; therefore, no impact would occur.

5.3.9 Mitigation Measures

The following mitigation measures have been identified to reduce potentially significant impacts to biological resources to a less than significant level.

MM-BIO-1

1. Prior to initial grading or clearing of areas of suitable habitat within the Planning Area (e.g., a vacant site with a landscape of grassland or low-growing, arid scrub vegetation or agricultural use or vegetation), a qualified biologist shall conduct a pre-construction survey, in accordance with the CDFG Staff Report on Burrowing Owl Mitigation, to determine the presence or absence of burrowing owl within the proposed area of impact.
2. Results of surveys, including mitigation recommendations (i.e., a Burrowing Owl Mitigation and Monitoring Report) shall be incorporated into the project-level CEQA compliance documentation.
3. Construction grading/clearing of areas of suitable habitat should occur between September 1 and January 31 to avoid impacts to breeding owls. If occupied burrows are discovered, they shall not be removed during nesting season (February 1 through August 31), unless a qualified biologist can determine that either the owls have not laid eggs or are incubating eggs, or that any young from the burrows are able to forage independently. If initial grading is scheduled to occur during nesting season, the following measures shall be implemented.
4. If removal of occupied burrows is necessary, passive relocation outside of nesting season shall be implemented under the supervision of the qualified biologist. This shall include covering/excavation of burrows and installation of one-way doors as necessary. One-way doors will allow owls inside the burrow to exit but not allow them to re-enter. The biologist shall wait a minimum of one week before the burrow may be excavated to allow the owls time to leave the area.

MM-BIO-2

To avoid impacts to nesting birds and to comply with the MBTA, clearing of vegetation and removal of trees should occur between non-nesting (or non-breeding) season for birds (generally, September 1 to January 31). If this avoidance schedule is not feasible, the alternative is to carry out such activities under the supervision of a qualified biologist. This shall entail the following:

1. A qualified biologist shall conduct a pre-construction nesting bird survey no more than 14 days prior to initiating ground disturbance activities. The survey will consist of full coverage of the proposed disturbance limits and up to a 500-foot buffer area, determined by the biologist and taking into account the species nesting in the area and the habitat present.

2. If no active nests are found, no additional measures are required.
3. If "occupied" nests are found, their locations shall be mapped, species documented, and, to the degree feasible, the status of the nest (e.g., incubation of eggs, feeding of young, near fledging) recorded. The biologist shall establish a no-disturbance buffer around each active nest. The buffer area will be determined by the biologist based on the species present, surrounding habitat, and type of construction activities proposed in the area.
4. No construction or ground disturbance activities shall be conducted within the buffer until the biologist has determined the nest is no longer active and has informed the construction supervisor that activities may resume.

Although significant biology impacts will be mitigated to less than significant levels through implementation of the above mitigation measures, the following mitigation measures are considered as best practices to be applied to future projects as may be necessary to reduce impacts to less than significant levels. This following list of mitigation measures is not all inclusive of mitigation measures that may be adopted for future projects but serve as a guide and performance standards that constitute the minimum level of measures to reduce environmental impacts to acceptable levels.

MM-BIO-3

The City of Fontana Planning Division shall require that all future project applicants prepare a Biological Assessment in conjunction with a project-level analysis. The Biological Assessment shall include a vegetation map of the proposed project area, analysis of the impacts associated with plant and animal species and habitats, and conduct habitat evaluations for burrowing owl, Delhi Sands flower-loving fly, San Diego pocket mouse, western mastiff bat, western yellow bat, and San Diego desert woodrat. If any of these special are determined to be present, then coordination with the U.S. Fish and Wildlife Service and/or California Department of Fish and Game shall be concluded to determine what, if any, permits or clearances are required prior to development

Each project-level Biological Assessment shall include an analysis of potential impacts to rare plants and rare natural communities in accordance with the California Department of Fish and Game's November 2009 guidance for Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. For those projects located in the Delhi Sands flower-loving fly Recovery Unit, the project-level Biological Assessment shall include focused surveys. The Biological Assessment shall prescribe actions necessary to mitigate the impacts identified for a particular project. Such actions shall include either avoidance of a sensitive resource, or payment of in-lieu fees that shall be used to purchase off-site replacement habitat. In instances where transplantation/relocation, off-site preservation, or fee payment is selected, habitat mitigation ratios shall be a minimum of 1:1, unless a greater ratio is required by a state or federal wildlife agency. The requirements of the Biological Assessment shall be a condition of approval of the individual development project.

MM-BIO-4 Prior to any ground disturbance, trees scheduled for removal shall be evaluated by a City-approved biologist for roosting bats. If a roost is present the biologist will develop a plan to minimize impacts to the bats to the greatest extent feasible.

MM-BIO-5 The City shall encourage the preservation of natural habitat in conjunction with private or public development projects.

MM-BIO-6 Mitigation shall be provided for removal of any natural habitat, including restoration of degraded habitat of the same type, creation of new or extension of existing habitat of the same type, financial contribution to a habitat conservation fund administered by a Federal, State, or local government agency, or by a non-profit agency conservancy.

MM-BIO-7 Local CEQA procedures shall be applied to identify potential impacts to rare, threatened and endangered species.

MM-BIO-8 Evidence of satisfactory compliance shall be provided by Project Applicant with any required State and/or Federal permits, prior to issuance of grading permits for individual projects.

MM-BIO-9 Any development that results in the potential take or substantial loss of occupied habitat for any threatened or endangered species shall conduct formal consultation with the appropriate regulatory agency and shall implement required mitigation pursuant to applicable protocols. Consultation shall be on a project-by-project basis and measures shall be negotiated independently for each development project.

MM-BIO-10 For future development proposals that could potentially affect jurisdictional drainages or wetlands (to be determined by the City of Fontana Planning Division), the project applicant shall prepare a jurisdictional delineation to determine the extent of jurisdictional area, if any, as part of the regulatory permitting process.

5.3.10 References

City of Fontana Code of Ordinances. Online content updated on October 25, 2017 (Supplement 42). Accessed on March 30, 2018: https://library.municode.com/ca/fontana.

Draft Fontana Forward General Plan Update 2015-2035. City of Fontana, California. October 9, 2017.

Fontana General Plan Update Background Report, 2016. Prepared by Stantec Consulting Services, Inc. for the City of Fontana, California. April.

Intellicast. 2018. Historical Weather Averages for Fontana, California. Available online at http://www.intellicast.com/Local/History.aspx?location=USCA0384.

Michael Baker International. 2015. Fontana General Plan Update Habitat Assessment. August 2015.

Michael Brandman Associates. 2003. City of Fontana Biological Resources Survey Data. July 2003.

USFWS (U.S. Fish and Wildlife Service). 2018. Wetland Mapper. National Wetlands Inventory. Washington, D.C.: USFWS. < https://www.fws.gov/wetlands/>.

5.4 CULTURAL RESOURCES

This section addresses the cultural and paleontological resources within the City of Fontana and potential impacts and mitigation measures that may impact these valuable resources from implementation of the General Plan Update. The City of Fontana's appreciation of the unique historic and prehistoric heritage is essential in understanding the cultural resources protection and mitigation plans adopted by the City for projects within the jurisdiction of the General Plan Update. The history of this area dates back thousands of years, long before Azariel Blanchard Miller founded the city in 1913. Due to the depth of cultural and paleontological history in the City of Fontana this section also includes Tribal Cultural Resources.

Cultural resources are defined as the sites, objects, features, and areas that represent the cultural ideas and practices that remain from human activities. In a broad sense, these resources can be classified prehistoric, before written records documented people and activities, or historic, those that may have accompanying written records. In general, prehistoric cultural resources have an indeterminate beginning that goes back thousands of years to the arrival of the Spanish in this region in the late eighteenth century. Ethnohistory is the term used to distinguish the history of the Native American populations utilizing written accounts, archaeological data, and oral history and interviews of the people themselves. This section also includes the paleontological resources within the City of Fontana. Paleontological resources include fossilized remains, traces or imprints of organisms preserved in or on the earth's crust (Pursuant to 16 USCS § 470aaa (4), [Title 16. Conservation; Chapter 1C]) Below is a brief examination of these resources as they occur within the City of Fontana.

5.4.1 Environmental Setting

This section discusses the environmental and cultural setting for the general region that includes the City of Fontana. This will provide the context for a deeper understanding for and appreciation of the varied types of cultural resources within the area.

The City of Fontana measures roughly 10-miles North-south and 7-miles east-west and is located within the San Bernardino Valley, from the foothills of the San Gabriel Mountains to the north and the Jurupa Mountains to the south. Several drainages, including Lytle Creek, flow out of the local mountains. Although now primarily urban, the City was once lushly vegetated with a variety of plant species that would have provided a rich supply of resources for the earliest inhabitants. Plant species would have included black, white, and purple sage, California brittlebush, Agave, Yucca spp., and buckwheat. The available vegetation and water from the Santa Ana River and seasonal drainages would have brought with it many species of mammals as well as reptiles and birds that would have rounded out available food sources, allowing for a population growth and inviting trade with surrounding groups.

5.4.1.1 Prehistoric Background

The prehistoric period in the Planning Area addressed in this EIR is not well-defined and many theoretical perspectives have been advanced. Below is a summary of general terminologies used to identify periods of cultural expression in the prehistoric period. The prehistoric cultural background for the City is summarized in general, regional terms that are based on decades of archaeological investigation, using styles and distribution of artifact assemblages and, when possible, radiocarbon and obsidian hydration techniques to uncover chronological patterns.

The earliest period of human occupation in southern California is referred to by various terms, including Clovis, Paleoindian, and Early Systems Period (Switalski and Harvey 2018). This is a time believed to have commenced about 12,000 years ago Before Present (BP), lasting until about 10,000 years BP. While some scholars have campaigned for the idea of a Pre-Projectile Point Tradition predating this time, it is not considered here, as there are no documented sites of this age near the City. The following cultural periods reflect human adaptations that occurred among prehistoric societies in inland California. While these are broad generalizations, there appear to be similarities among various populations in southern California, particularly in the inland areas.

Prehistoric chronological sequences for the area can be represented by the Encinitas Tradition. Tradition is defined by Warren (1968:1) as, "a generic unit comprising historically related phases". These phases can be characterized based on patterns seen in artifact types (Sutton and Gardner 2010:4; Warren 1968:1) with more precise data coming from obsidian hydration tests and radiocarbon assays. The Encinitas Tradition is characterized by an abundance of grinding implements (manos and metates), rough core and flaked stone and bone tools, and shell ornaments but few projectile points and hunting implements (Sutton and Gardner 2010). Subsistence focused more heavily on collecting rather than hunting with faunal remains, varying by site, including marine mammals, fish, shell fish, and land animals (Sutton and Gardner 2010:7). The Encinitas Tradition has four regional patterns. The pattern applicable for the City is Greven Knoll, recognized in the inland Los Angeles, Orange, San Bernardino, and Riverside County areas (Sutton and Gardner 2010:8-25). Below are descriptions of the three patterns of the Encinitas Tradition applicable to the City based on Sutton and Gardener (2010).

Greven Knoll I

The Greven Knoll III Pattern of the Encinitas Tradition (9,400 to 4,000 BP) is characterized by manos and metates, large dart points and core tools but no mortars and pestles. Flexed inhumations with occasional cremations were preferred methods of internment. It has been noted that there have been no documented shellfish sustenance remains and hunting was important to the people's subsistence. It is believed that this period was influenced by Pinto Groups from the Mojave Desert (2010:26). The *Yukaipa't* site in San Bernardino County is an example of this pattern. This site, excavated in 1947 and 1948, included a large quantity of manos and matates, large dart points (such as Pinto points which stylistically date form 7,000-4,000 BP)) and stone and shell beads (2010:27). Several other Greven Knoll I site types have been

documented in San Bernardino, including at least one near the City of Fontana. Obsidian artifacts from Greven Knoll I sites have been sourced to the Coso Volcanic Fields located more than 150-miles north. The earliest known evidence of the use of ceramic vessels was found at a Greven Knoll I site in Riverside County.

Greven Knoll II

The Greven Knoll II Pattern of the Encinitas Tradition (4,000 to 3,000 BP) was similar to Greven Knoll I but with a marked difference in the ratio of ground stone tools to flaked stone tools. In Greven knoll II ground stone tools (e.g. manos, metataes) increased while dart points, such as Elko-style points (4,000 – 1,500 BP), and bone tools decreased. No new hunting technology, such as the bow-and-arrow, was introduced during this period. At around the middle of the Greven Knoll II pattern a significant change appears in coastal areas. Populations expanded, new artifact types were developed, subsistence patterns changed, and sedentism increased. These changes seem to coincide with the influx of Takic language groups into the area. However, the inland Greven knoll II populations seemed to not be affected by this influx and instead became more isolated from the coastal groups and developed new subsistence strategies of their own.

Greven Knoll III

The Greven Knolls III Pattern of the Encinitas Tradition (3,000 to 1,000 BP) continued to place a high importance on hunting and gathering. The most significant difference between Greven Knolls II and Greven Knolls III is the emergence of the scrapper plane, an important artifact for yucca processing. Obsidian was still being either traded or procured from the Coso Volcanic fields but a few specimens from one of the Crowder Canyon Greven Knoll III sites were sourced to Obsidian Buttes, over 100-miles southeast of the Planning Area. Although radiocarbon dates are rare, projectile point typology was useful with Elko and Gypsum dart points (4,000 – 1,500 BP) as well as Rose Spring and Cottonwood arrow points (1,500 to 800 BP) being found in Greven Knoll III artifact assemblages. Greven Knoll III contain more scrapper planes, ornaments, and bone artifacts than Greven Knoll II. Greven Knoll III continued until about 1,000 BP at which time it may have been replaced by Takic influences that were moving inland from the coast (Sutton and Gardener 2010: 37 and Sutton 2009).

Table 5.4-1 Marker Traits of Patterns and Phases within Encinitas Tradition for the City of Fontana*

Pattern	Phase	Dates Before Present (BP)	Material Culture Traits	Other Traits
Inland San Bernardino,, Riverside, Orange, and Los Angeles Counties				
Greven Knoll	Greven Knoll III	3,000 to 1,000	Abundant manos and metates, Elko-type points, scrapper planes, choppers, hammerstones, late discoidals, few mortars and pestles, general lack of shell artifacts	No shellfish, yucca and seeds were staples, hunting important but bones were processed, flexed inhumations under cairns, cremation rare.
	Greven Knoll II	4,000 to 3,000	Abundant manos and metates, Elko-type points, core tools, late discoidals, few mortars and pestles, general lack of shell artifacts	No shellfish, hunting and gathering important, flexed inhumations, cremations rare
	Greven Knoll I	9,400 to 4,000	Abundant manos and metates, Pinto-type points, charmstones, cogged stones and discoidals rare, no mortars and pestles, general lack of shell artifacts	No shellfish, hunting important, flexed inhumations, cremations rare
* Sutton and Gardner 2010:8				

5.4.1.2 Ethnohistoric Background

During the Ethnohistoric period two groups claimed this area as their use area. These were the Gabrielino and the Serrano. Both of these groups trace their ancestry through artifacts, oral history, and cultural traditions to the San Bernardino County areas. The Gabrielino territory lies mainly to the west and the Serrano to the east from the City but the boundary is broad and undefined, allowing for interaction and trade between the groups. Both groups practiced a hunting-gathering subsistence strategy and both were decimated by disease and forceful eviction as more settlers discovered the rich valleys of historic San Bernardino County.

Gabrielino

The group that inhabited much of southern California from the Pacific Coast near present day Los Angeles, including three of the Channel Islands and, into the current San Bernardino County area were historically referred to by association with the San Gabriel Mission. The name was spelled Gabrieliño or Gabrieleño (McCawley 1996:9; Dietler et el 2015:15) and although there is little evidence that they used a general name to define their cultural groups they most likely identified by the community or area they were from (Reid 1978:222; Dietler et el 2015:15). Today,

various groups prefer the designation of *Tongva* or Kizh, rather than Gabrielino. This section will use the name *Tongva* for this group.

The *Tongva* territory encompassed a vast area that covered an area of more than 2,500 square miles (Bean and Smith 1978, McCawley 1996). At European contact, the tribe consisted of more than 5,000 people living in various settlements throughout the region (McCawley 1996). The *Tongva* are considered to have been one of the wealthiest tribes and they appear to have greatly influenced tribes they traded with (Kroeber 1976:621).

The *Tongva* practiced hunting and gathering economy and at the time of Spanish contact, as early as 1542 for coastal groups with the Cabrillo expedition, with plant foods playing a significant part of the *Tongva* diet. Seeds were parched then ground and cooked as mush in various combinations according to availability and personal preferences. Plant foods would be eaten raw or cooked and would also be dried for storage. Bulbs, roots, and tubers were dug in the spring and summer and usually eaten fresh. Various teas were made from flowers, fruits, stems, and roots for medicinal cures as well as beverages (Bean and Smith 1978:538-540). The principal game animals were deer, rabbit, jackrabbit, woodrat, mice, ground squirrels, antelope, quail, dove, ducks, and other birds (Bean and Smith 1978). Predators were largely avoided as food, as were tree squirrels and most reptiles (Bean and Smith 1978). Houses were domed, circular structures that were thatched with tule or similar materials (Bean and Smith 1978:542). The coastal *Tongva* groups are renowned for their workmanship of steatite and these artifacts were highly prized (Bean and Smith 1978). Common everyday steatite items were often decorated with inlaid shell or carvings reflecting the intricately developed skill of the creator (Bean and Smith 1978:542).

Serrano

The Serrano, like the *Tongva*, occupied large areas of land that included the City. Their territory was as diverse as the *Tongva* and included the San Gabriel and San Jacinto Mountains and the Mojave and Colorado Desert. Historically, they have been referred to as Desert Serrano and Mountain Serrano. The name Serrano, given the group by the Spanish, means "mountain dwellers" (Bean and Smith 1978:574). Serrano who lived at *Yuhaviat*, near present day Big Bear Lake, were called the *Yuhaviatam*, People of the Pines (San Manual n.d.).

The Serrano practiced a hunting and gathering economy with an expansive variety of subsistence choices ranging from the valleys and desert to the mountains. Plant food would have included honey mesquite, acorn, pinyon, yucca, berries, and chia seeds (Bean and Smith 1978:571). The cultural area of the Serrano would have allowed deer, pronghorn, and bighorn sheep as well as small game such as rabbits, birds, and aquatic life from the Mojave and Santa Ana Rivers. The desert and mountain Serrano would share resources to supplement their local supplies (e.g., Kroeber 1976). The Serrano used willow and yucca fiber to build dome-shaped homes, called a *Kiic*, that measured 12-14-feet across (San Manual n.d.). Yucca fiber, along with deergrass, and juncus were used to weave magnificent baskets durable enough to hold water and hot stones and to boil water (San Manual n.d.).

The Serrano, called *kuko'mkar* or *qaqa'yvit* by the Tongva (Bean and Smith 1978:574), were able to avoid many of the disrupting influences of Spanish settlers and the California Mission system until 1819 when an asistencia, a mission outpost, was built in the what is now known as Redlands. After this time until the secularization in 1834 Serrano began being forcibly removed from their homelands to missions (Bean and Smith 1978:573). In 1866 militia forces killed many Serrano men, women, and children in a 32-day campaign (San Manual n.d.). A *Yuhaviatam* tribal leader named Santos Manuel safely led the remaining *Yuhaaviatam* from their mountain homelands to valley floor (San Manual n.d.). The San Manual Reservation, and associated San Manual Band of Mission Indians, are named in honor of this heroic leader (San Manual n.d.).

Prehistoric Cultural Resources

Previous studies indicate that at least 14 sites deemed prehistoric (both prehistoric and ethnohistoric) have been documented within the City (2001 Love et el). These resources include the remnants of a significant village site as well as bedrock milling sites, tool production sites, and isolated artifacts. These sites are located primarily in the southern portion of the City that are closer to mountain drainages. The lack of prehistoric sites within the City of Fontana urban center is likely due to obliteration by development. However, remnants of prehistoric sites may still be present below the surface, having been displaced underground during development.

5.4.1.3 Historic Background

The arrival on non-native people into the area now known as San Bernardino County occurred in 1772 when Pedro Fages traversed the area with a group of soldiers exploring the new lands under Spanish control. Fages was followed by Juan Bautista de Anza and then Francisco Garces later in the 1770s. These early travelers made little direct impact on the Native inhabitants during their travels and until the nineteenth century the land was quiet. However, by the early 1800s change came quickly with the impacts from disease and attempts to missionize the Native inhabitants.

In 1842, the Rancho de San Bernardino land grant was awarded to the Lugo family by Governor Alvarado. This grant, which included some 127,700 acres of land, comprised the best part of San Bernardino Valley, land that included the City of Fontana. Nine years later, in 1851, the Lugos' sons sold parts of their land grant to Mormon colonists, who began cultivating crops and developing an irrigation system using waters from Lytle Creek. Although the bulk of the Mormon settlers did not stay long a few did stay behind to continue the crops. By the 1850s, man-made features noted by United States (U.S.) land surveyors in the area were several winding roads, including a "San Bernardino Road," also identified as "Los Angeles and San Bernardino Road," traversing just to the south of present-day Baseline Road, and an "Old San Bernardino Road" running along the foot of the Jurupa Mountains (Brandman and Associates 2003:5.11-5). The Old San Bernardino Road was possibly a trading route that had been utilized by the local Tribes prior to historic times while the San Bernardino Road appears to have been a wagon road initiated by Mormon settlers for the transportation of freight.

In 1874 a family of French immigrants, the Sainsevain brothers, moved their wine business into the San Bernardino area with vineyards that extended from the Los Angeles foothills to the northern part of the City. Other businesses representing agriculture and orchards began showing up on surveyors' maps during the 1870s and 1880s, mainly around the north end of the City. By 1887 the Rosena townsite, in what is today downtown Fontana, was sub-divided by the Semi-Tropic Land and Water Company and, along with the community of Grapeland at the foot of the San Gabriel Mountains and the Declezville quarry at the foot of the Jurupa Mountain, Rosena became a center of rural development. The area around transportation corridors such as Baseline Road and the Santa Fe Railway attracted the bulk of residential development by the end of the 19th century.

As California began a period of rapid growth in the early 20th century so did Rosena and with the arrival of Azariel Blanchard (A.B.) Miller in 1905 the area began a period of substantial growth. In 1913 Rosena and Grapeland, was reorganized as the City of Fontana. Miller founded Fontana Farms, Fontana Union Water Company, Fontana Power Company, B. B. Company, and Miller Livestock Company. Miller began selling lots as the Fontana Land Company. With Miller creating the opportunities, the city began an expansion that continued well into the beginning of the 1940s with the second major growth for Fontana.

In 1952, Fontana incorporated as a city and continued to grow with the influx of workers to the steel plant. Kaiser Steel was established in Fontana in 1942 by Henry J Kaiser to supply steel for his seven shipyards (Cushing 2017). Opening a few days after Christmas the dedication was a "patriotic extravaganza", for the first complete steel mill west of the Rockies (Brooks 1987). Kaiser Steel was considered the twelfth largest producer of steel in the U.S. by 1953. The possibilities for employment at the mill and supporting businesses in the city had a profound influence on the growth of Fontana as well as other surrounding communities. As industry became more important agriculture began to decline and urbanization to begin, predominantly in the south-central portion of Fontana. The mill closed in the 1980s.

Henry Kaiser borrowed an idea developed in the isolated desert town of Desert Center for a health care system that transformed insurance services in California. In the 1940s when Kaiser acquired ore rights at Eagle Mountain Mine he worked with Dr. Sidney Garfield, the surgeon at a small 12-bed hospital near Desert Center, to bring his health care system to his new mill. Garfield developed a "prepayment" system with an insurance company to ensure that workers at the nearby Eagle Mountain mine and on the Colorado River Aqueduct would be able to receive medical care and doctors would be ensured payment for services in this isolated locale. In 1945, the Permanente Health Plan officially opened to the public in the City of Fontana (Cushing 2017). The growth of Kaiser Permanente facilities on Sierra Avenue, north of I-10, has developed into a large commercial strip that continues to provide economic opportunities to this section of the City and the larger Fontana region.

5.4.1.4 Historic Resources Summary

There have been over 100 historic era cultural resources previously documented in the City. These consist mainly of historic residences but also include an irrigation system, transportation systems (such as Route 66), and historic industrial sites such as Kaiser Mill. The historic residences that are documented date mainly to the early to mid-20th century; however, some documented irrigation and transportation systems pre-date the founding of the townsite.

In total, the City of Fontana lists three National Register-listed properties, one California Historic landmark, and 12 California Points of historic Interest. These include the Fontana Pit and Groove Site, the U.S. Experimental Rabbit Station, and the location of the former Kaiser Mill. As the City of Fontana seeks to preserve the cultural and historic heritage of the City the probability of more sites listed as eligible for listing in the California Register of Historic properties or the National Register of Historic Places exists, notably in the downtown area, bounded generally by Miller Avenue on the north, Cypress Avenue on the west, Merrill Avenue on the south, and Tamarind Avenue on the east, which hosts a higher concentration of historic-era buildings, including many that are considered significant by the local community. The City of Fontana has identified property at Sierra Avenue and Spring Streets as a potential site for Fontana Historical Museum while the Fontana Historical Society is working to increase awareness of the City's unique cultural history.

5.4.1.5 Paleontological Resources

Paleontological resources are protected under *California Environmental Quality Act* (CEQA) as a cultural resource. This section relies on research conducted for the General Plan EIR conducted in 2003 at the San Bernardino County Museum (2003 City of Fontana General Plan EIR) and the United States Geological Survey (USGS) Preliminary Geologic Map of Fontana (Morton 2003). The area under consideration for this General Plan Update is located on the relatively tectonically stable Perris Block located between the San Jacinto and Elsinore Fault Zones at the north end of the Peninsular Range (Morton 2003; Jahns 1954). This area within the City of Fontana is situated on surface exposures of Quaternary younger alluvial fan deposits (Holocene to late Pleistocene period) that are scored by more recent wash deposits. Major marble quarries are located within the Jurupa Mountains.

Although younger fan deposits do not have the potential to contain significant paleontological resources the City also contains areas of Pleistocene older fan deposits exposed at surface levels that have been mapped along the western area of the City near the intersection of I-15 and I-210 and also in the southwestern areas of the City. Subsurface Pleistocene deposits overlain with more recent alluvial deposits are also known to be present. Within these Pleistocene older deposits the potential for paleontological resources is consider to be high. Paleontological resources, including the remains of a saber-tooth cat, have been recovered in the southwest area and many fossils that include Pleistocene mega-faunal (e.g. mammoth, camels, horses have been recovered from the Jurupa Basin area near the intersection of Jurupa Avenue and Mulberry Avenue within the City of Fontana.

5.4.2 Tribal Cultural Resources

This section provides a discussion and evaluation of potential effects to Tribal Cultural Resources that may occur due to implementation of the proposed General Plan Update.

5.4.2.1 Background

The City of Fontana lies within the *Tongva* and Serrano traditional use area; areas utilized by the ethnohistoric *Tongva* and Serrano groups for their cultural places including but not limited to: artifacts, natural spaces, settlements, gathering places, and spaces used for cultural practices including cemeteries, shrines, and ceremonial sites. As such, the City of Fontana assumes the role of lead agency to ensure that Tribes are contacted and asked to participate in meaningful discussions about projects that may impact Tribal Cultural Resources to assure that any potential impacts identified during the consultation process are mitigated to levels acceptable to Tribal consultants. State laws that provide the guidelines for protection of Traditional Cultural Resources are Assembly Bill (AB) 52 and Senate Bill (SB)18, discussed below.

Assembly Bill 52

California Assembly Bill 52 (AB 52) of 2014 was enacted as of July 1, 2015, and expands the CEQA process by defining a new category of cultural resources called Tribal Cultural Resources (TCR). This bill requires consultation with both federally and non-federally recognized tribes maintained on the Native American Heritage Commission (NAHC) contact list. Because the majority of traditional lands are not on lands defined as "reservations" they are not protected by Tribal government policies that protect cultural resources. Therefore, it is the responsibility of federal, state, and local government to institute protection measures for TCRs as defined by the effected Tribes. This protection is achieved through government-to-government consultation (i.e. lead agency-to-Tribal government) early in the consultation process. If, during the consultation process, a consulting Tribe relates their concerns regarding project plans the city will assume responsibility to ensure a mitigation plan is developed that is acceptable to consulting Tribes. It is also the responsibility of the city government to respect confidentiality of the places or objects identified by the Tribe(s) as having cultural importance. Tribes have 30-days upon receipt of notification to comment on projects sent for consultation.

Senate Bill 18

Senate Bill 18 (SB 18), signed into law in September 2004, requires that cities and counties consult with California Tribes listed on the list maintained by the NAHC before adopting or amending a General Plan or designating land as Open Space. These requirements are not part of the CEQA process but were established to ensure Tribes have opportunities to express concerns for regarding potential impacts within the Tribe's traditional lands within the city's or county's jurisdiction. The bill added three sections to the State Planning Law (consultation) Government Code, amended five sections of the State Planning Law (notice) Government Code, and

Amended one section of the Civil Code (Morgan n.d.). Tribes have a 90-day allotted review time under SB 18.

SB 18 does not include consultation with state or federal agencies and does not cover projects on state or federally owned properties or on school districts, water districts or other "special" districts.

5.4.2.2 Results of Consultation

The City of Fontana contacted the NAHC requesting a review of their sacred lands files for any Native American cultural resources that might be affected by the proposed General Plan Update. The NAHC responded, stating that a search of the Sacred Lands File was completed for the Area of Potential Effect (APE) with negative results (Appendix E).

The NAHC also provided a list of 25 local Native American individuals/organizations for further consultation who may have knowledge of cultural resources within the APE. Certified letters requesting consultation under both SB 18 and AB 52 were mailed to these individuals on November 22, 2016, providing them with a description of the project. These letters also contained maps depicting the area covered under the General Plan Update. The letters asked for any information or concerns regarding the project.

There have been two responses to the request for consultation. The first was from the Tribal Historic Preservation Officer for the Pala Band of Mission Indians on December 1, 2016, stating that the project is not within the Tribe's Traditional Use Area and that they, therefore, defer to other Tribes in the area. On December 8, 2016, the Tribal Historic Preservation Office of Agua Caliente Band of Cahuilla Indians responded via email that the project is outside of their Traditional Use Area and that they defer to other Tribes in the area. As of March 2017, no further responses have been received from the other Tribes consulted regarding this request, and the time period for requesting consultation under SB 18 or AB 52 was closed 90 days after the notices were sent. Table 5.4-2 provides a list of consultation efforts.

Table 5.4-2 Tribal Outreach under SB 18 and AB 52

Contact Name	Title	Tribal Affiliation	Date of Contact	Response[1]
Mary Resvaloso	Chairperson	Torres-Martinez Desert Cahuilla Indians	22-Nov-16	Response not received as of March 2017
Mark Macarro	Chairperson	Pechanga Band of Mission Indians	22-Nov-16	Response not received as of March 2017
Jim McPherson	THPO	Rincon Band of Mission Indians	22-Nov-16	Response not received as of March 2017
Bo Mazzetti	Chairperson	Rincon Band of Mission Indians	22-Nov-16	Response not received as of March 2017
San Luis Rey Tribal Council	Tribal Council	San Luis Rey Band of Mission Indians	22-Nov-16	Response not received as of March 2017
Thomas Rodriquez	Chairperson	La Jolla Band of Luiseno Indians	22-Nov-16	Response not received as of March 2017
Robert Smith	Chairperson	Pala Band of Mission Indians	22-Nov-16	On December 1, 2016, a letter was received from the THPO stating that this project is not within their Traditional Use Area and deferring to other Tribes.
John Valenzuela	Chairperson	San Fernando Band of Mission Indians	22-Nov-16	Response not received as of March 2017
Linda Candelaria	Co-Chairperson	Gabrieleno-Tongva Tribe	22-Nov-16	Response not received as of March 2017
Robert F. Dorame	Chairperson	Gabrieleno Tongva Indians of California Tribal Council	22-Nov-16	Response not received as of March 2017
Sandonne Goad	Chairperson	Gabrieleno/Tongva Nation	22-Nov-16	Response not received as of March 2017
Anthony Morales	Chairperson	Gabrieleno/Tongva San Gabriel Band of Mission Indians	22-Nov-16	Response not received as of March 2017
Doug Welmas	Chairperson	Cabazon Band of Mission Indians	22-Nov-16	Response not received as of March 2017

[1] The time period for requesting consultation under SB 18 or AB 52 was closed 90 days after the notices were sent.

Table 5.4-2 Tribal Outreach under SB 18 and AB 52

Contact Name	Title	Tribal Affiliation	Date of Contact	Response[1]
Amanda Vance	Chairperson	Augustine Band of Cahuilla Mission Indians	22-Nov-16	Response not received as of March 2017
Jeff Grubbe	Chairperson	Agua Caliente Band of Cahuilla Indians	22-Nov-16	On December 8, 2016, an email response from the THPO was received stating that this project is not within their Traditional Use Area and deferring to other Tribes.
Andrew Salas	Chairperson	Gabrieleno Band of Mission Indians-Kizh Nation	22-Nov-16	Response not received as of March 2017
Joseph Hamilton	Chairperson	Ramona Band of Cahuilla Indians	22-Nov-16	Response not received as of March 2017
Temet Agullar	Chairperson	Pauma Band of Luiseno Indians	22-Nov-16	Response not received as of March 2017
Robert Martin	Chairperson	Morongo Band of Mission Indians	22-Nov-16	Response not received as of March 2017
Shane Chapparosa	Chairperson	Los Coyotes Band of Mission Indians	22-Nov-16	Response not received as of March 2017
Steven Estrada	Chairperson	Santa Rosa Band of Mission Indians	22-Nov-16	Response not received as of March 2017
Lee Clauss	Director of Cultural Resources	San Manuel Band of Mission Indians	22-Nov-16	Response not received as of March 2017
Goldie Walker	Chairperson	Serrano Nation of Mission Indians	22-Nov-16	Response not received as of March 2017
Rosemary Morillo	Chairperson	Soboba Band of Luiseno Indians	22-Nov-16	Response not received as of March 2017
Luther Salgado	Chairperson	Cahuilla Band of Indians	22-Nov-16	Response not received as of March 2017

5.4.3 Thresholds of Significance

The following list of thresholds of significance regarding potential impacts to cultural and paleontological resources are based on Appendix G of the CEQA guidelines. Although there are currently no development projects associated with the General Plan Update, implementation of this plan would be the guiding document within the City through 2035. Any development implemented under this proposed General Plan Update would have a substantial adverse change if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5.
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5.
- Cause a substantial adverse change to the significance of a Tribal Cultural Resources as defined in Public Resources Code section 21074 (site/feature/place/landscape/sacred place of object) that holds cultural or religious value to a California Native American Tribe.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
- Disturb any human remains, including those interred outsides of formal cemeteries.

A substantial adverse change is defined under CEQA Guidelines Section 15064.5(b) as physical demolition, destruction, relocation, or alteration of a resource or its immediate surroundings to the extent that the significance of the resources would be materially impaired. The significance is material impaired when a project:

- Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources, or
- Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, 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 those 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.

5.4.4 Environmental Impacts

Would the Project cause a substantial adverse change in the significance of a historical or archaeological resource as defined in § 15064.5.

The General Plan Update would be the guiding planning document for the City through 2035. Development implemented under the General Plan Update could potentially affect known or unknown cultural and/or paleontological resources. However, effects on cultural or resources can only be addressed after a project has been proposed because the effects are dependent on location, site conditions, and project development characteristics (e.g., depth of ground disturbances). Therefore, potential impacts that could destroy or damage cultural resources as a result of development under this General Plan Update are too speculative to assess at this time. Consequently, each project and the potential impacts will be assessed by the City at the time of a development proposal.

Furthermore, as presented in Table 5.4-3 below, General Plan Update community and neighborhoods goals, policies, and actions are intended to be consistent with and complement Article XIII of the Fontana Municipal Code, Preservation, of Historic Resources. This article of the City's Municipal Code also provides for the Planning Commission to act as Historic Preservation Commission. Acting in this role the Historic Preservation Commission is authorized to:

1. Act as a liaison among city residents, owners of historical resources, owners of property within historical overlay districts and the city council;
2. Recommend to the city council, in accordance with the criteria set forth in this article, the designation of historical resources and historic overlay districts;
3. Recommend to the city council the approval, conditional approval or denial of applications for certificates of appropriateness for proposed or designated historical resources or historic overlay districts, pursuant to the provisions of this article;
4. Review documents and report to the city council regarding proposed changes to the general plan, zoning and maps, municipal improvements, developments agreements, environmental impact reports and statements, and specific housing and redevelopment plans that relate to the protection, maintenance or enhancement of proposed or designated historical resources or historic overlay districts; and
5. Consider, in accordance with the provisions of this article, requests for certificates of economic hardship.

Therefore, the goals, policies, and actions of the General Plan Update will not cause significant impacts to cultural resources. Future development projects will be subject to applicable regulations in City Municipal Code dealing with cultural resources as well as federal and state cultural resources laws and regulations. Therefore, the General Plan Update will result in a less than significant impact to cultural resources.

Table 5.4-3 General Plan Update Goals, Policies, and Actions Applicable to Cultural Resources

Goals & Policies	Actions
Community & Neighborhoods	
Goal 1: The integrity and character of historic structures, cultural resources sites and overall historic character of the City of Fontana are maintained and enhanced.	
• Coordinate City programs and policies to support preservation goals. • Support and promote community-based historic preservation initiatives. • Designate local historic landmarks. • Provide appropriate tools to review changes that may detract from historic integrity and character.	A. Designate a staff person in the Planning Division with responsibility for historic and cultural resource issues and as a liaison to the Fontana Historical Society. B. Establish and maintain a thorough inventory of historic sites to be kept in the Planning Division and at the Historical Society. C. Review the Historic Resources Inventory prepared in the 1990s and other resources to develop an authoritative listing. D. Create a ranking system and priority list to identify the most important historic sites in Fontana to ensure that these sites are protected by Article XIII of the Fontana Code. E. Seek assistance in reviewing and completing the Historic Resources Inventory, creating a priority list, and researching and preparing any sites to submit for listing. F. Adopt incentives to encourage and streamline adaptive reuse of the most important historic structures.
Goal 2: Residents' and visitors' experience of Fontana is enhanced by a sense of the city's history.	
• Enhance public awareness of Fontana's unique historical and cultural legacy and the economic benefits of historic preservation in Fontana. • Support creation of the Fontana Historical Museum.	A. Inform owners about the historic value of their properties. B. Create a program of historic plaques and markers in collaboration with the Historical Society. C. Provide information and assistance for owners of historic properties who do not require a Certificate of Appropriateness to encourage them to retain the historic value of their properties when making alterations. D. Establish the Fontana Historical Museum for the Historical Society. E. Establish programs to inform residents and visitors about Fontana's history. F. Develop a brochure and/or a podcast for self-guided historical tours of Fontana, including all aspects of the city's history. G. Create roadside and building markers for important locations in Fontana history, regardless of whether a historic structure remains on the site.

Table 5.4-3 General Plan Update Goals, Policies, and Actions Applicable to Cultural Resources

Goals & Policies	Actions
	H. Provide a yearly presentation to schools in Fontana about the City's history. I. Incorporate Route 66 history into revitalization design for Foothill Boulevard.
Goal 3: Cultural and archaeological resources are protected and preserved.	
• Collaborate with state agencies to protect cultural and archaeological resources.	A. Continue to ensure that proper protocols are observed in development proposals for sites with potential archaeological significance. B. Include archaeological sites and Native American history and archaeology in programs about Fontana history.

Cause a substantial adverse change to the significance of a Tribal Cultural Resources as defined in Public Resources Code section 21074 (site/feature/place/landscape/sacred place of object) that holds cultural or religious value to a California Native American Tribe.

As previously stated, the City is compelled to comply with AB 52 and SB18 dealing with Tribal Cultural Resources. These laws require the City to consult with Native American Tribes to determine their interest in future projects located within the City. General Plan Update goals, policies, and actions are consistent with the requirements of AB52 and SB18 and Goal 3: Cultural and archaeological resources are protected and preserved reinforces the City's commitment to the preservation of cultural and archaeological resources, including Tribal Cultural Resources. Therefore, the General Plan Update will not cause significant impacts to Tribal Cultural Resources.

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

Similar to the discussion of cultural and archaeological resources, no specific development project is part of the General Plan Update and future projects will undergo environmental and development review at the time of a development application. The project would be assessed for the potential to impact paleontological resources based on the location of the project with respect to the sensitivity of the underlying geologic formations to contain fossils as well as the depth of excavation of the facilities associated with the project. Therefore, it is speculative to evaluate impacts of future projects on paleontological resources. As stated previously, the General Plan Update goals, policies, and actions commit the City to preserve and protect significant historic and cultural resources. Therefore, no significant impacts will result to paleontological resources from the General Plan Update goals, policies, and actions.

Disturb any human remains, including those interred outsides of formal cemeteries.

Similar to the discussion of potential impacts to historic or archaeological resources, impacts to human remains are dependent on the location and nature of the project such as excavation for project features. Projects proposed in the future will be subject to environmental review by the City and subject to federal and state law regarding disturbance of human remains. Therefore, it is speculative to evaluate impacts of future projects on human remains. As stated previously, the General Plan Update goals, policies, and actions commit the City to preserve and protect significant historic and cultural resources. Therefore, no significant impacts will result to human remains from the General Plan Update goals, policies, and actions.

5.4.5 Mitigation Measures

While no significant cultural resource impacts have been identified that require mitigation to less than significant levels, the following mitigation measures are considered as best practices to be applied to future projects, as necessary, to reduce impacts to less than significant levels. The following list of mitigation measures is not all inclusive of mitigation measures that may be adopted for future projects but serve as a guide and performance standards that constitute the minimum level of measures to reduce environmental impacts to acceptable levels.

MM-CUL-1 A qualified archaeologist shall perform the following tasks, prior to construction activities within project boundaries:

- Subsequent to a preliminary City review, if evidence suggests the potential for historic resources, a field survey for historical resources within portions of the project site not previously surveyed for cultural resources shall be conducted.
- Subsequent to a preliminary City review, if evidence suggests the potential for historic resources, the San Bernardino County Archives shall be contacted for information on historical property records.
- Subsequent to a preliminary City review, if evidence suggests the potential for sacred land resources, the Native American Heritage Commission shall be contacted for information regarding sacred lands.
- All historical resources within the project site, including archaeological and historic resources older than 50 years, shall be inventoried using appropriate State record forms and guidelines followed according to the California Office of Historic Preservation's handbook "Instructions for Recording Historical Resources." The archaeologist shall then submit two (2) copies of the completed forms to the San Bernardino County Archaeological Information Center for the assignment of trinomials.
- The significance and integrity of all historical resources within the project site shall be evaluated, using criteria established in the CEQA Guidelines for important archaeological resources and/or 36 CFR 60.4 for eligibility for listing on the National Register of Historic Places.

- Mitigation measures shall be proposed and conditions of approval (if a local government action) recommended to eliminate adverse project effects on significant, important, and unique historical resources, following appropriate CEQA and/or National Historic Preservation Act's Section 106 guidelines.
- A technical resources management report shall be prepared, documenting the inventory, evaluation, and proposed mitigation of resources within the project site, following guidelines for Archaeological Resource Management Reports prepared by the California Office of Historic Preservation, Preservation Planning Bulletin 4(a), December 1989. One copy of the completed report, with original illustrations, shall be submitted to the San Bernardino County Archaeological Information Center for permanent archiving.
- If human remains are encountered on the project site, the San Bernardino County Coroner's Office shall be contacted within 24 hours of the find, and all work shall be halted until a clearance is given by that office and any other involved agencies.
- All resources and data collected within the project site shall be permanently curated at an appropriate repository within the County.

MM-CUL-2 If any prehistoric archaeological resources are encountered before or during grading, the developer shall retain a qualified archaeologist to monitor construction activities and to take appropriate measures to protect or preserve them for study. With the assistance of the archaeologist, the City of Fontana shall:

- Enact interim measures to protect undesignated sites from demolition or significant modification without an opportunity for the City to establish its archaeological value.
- Consider establishing provisions to require incorporation of archaeological sites within new developments, using their special qualities at a theme or focal point.
- Pursue educating the public about the area's archaeological heritage.
- Proposal mitigation measures and recommend conditions of approval (if a local government action) to eliminate adverse project effects on significant, important, and unique prehistoric resources, following appropriate CEQA guidelines.
- Prepare a technical resources management report, documenting the inventory, evaluation, and proposed mitigation of resources within the project area. Submit one copy of the completed report, with original illustrations, to the San Bernardino County Archaeological Information Center for permanent archiving.

MM-CUL-3 Where consistent with applicable local, State and federal law and deemed appropriate by the City, future site-specific development projects shall consider the following:

- In the event Native American cultural resources are discovered during construction for future development, all work in the immediate vicinity of the find shall cease and a qualified archaeologist meeting Secretary of Interior standards shall be hired to assess the find. Work on the overall project may continue during this period;

- Initiate consultation between the appropriate Native American tribal entity (as determined by a qualified archaeologist meeting Secretary of Interior standards) and the City/project applicant; Transfer cultural resources investigations to the appropriate Native American entity (as determined by a qualified archaeologist meeting Secretary of Interior standards) as soon as possible;
- Utilize a Native American Monitor from the appropriate Native American entity (as determined by a qualified archaeologist meeting Secretary of Interior standards) where deemed appropriate or required by the City, during initial ground disturbing activities, cultural resource surveys. and/or cultural resource excavations.

MM-CUL-4 A qualified paleontologist shall conduct a pre-construction field survey of any project site within the Specific Plan Update area that is underlain by older alluvium. The paleontologist shall submit a report of findings that provides specific recommendations regarding further mitigation measures (i.e., paleontological monitoring) that may be appropriate.

MM-CUL-5 Should mitigation monitoring of paleontological resources be recommended for a specific project within the project site, the program shall include, but not be limited to, the following measures:

- Assign a paleontological monitor, trained and equipped to allow the rapid removal of fossils with minimal construction delay, to the site full-time during the interval of earth-disturbing activities.
- Should fossils be found within an area being cleared or graded, earth-disturbing activities shall be diverted elsewhere until the monitor has completed salvage. If construction personnel make the discovery, the grading contractor shalt immediately divert construction and notify the monitor of the find.
- All recovered fossils shall be prepared, identified, and curated for documentation in the summary report and transferred to an appropriate depository (i.e., San Bernardino County Museum).
- A summary report shall be submitted to City of Fontana. Collected specimens shall be transferred with copy of report to San Bernardino County Museum.

5.4.6 References

Bean, L.J. and C.R. Smith. 1978. Gabrielino. In *Handbook of North American Indians*, Volume 8. *California*, volume edited by Robert F. Heizer, pp. 538-549 (W. T. Sturtevant, general editor). Smithsonian Institution, Washington, D.C.

Bean, L.J. and C.R. Smith. 1978. Serrano. In *Handbook of North American Indians*, Volume 8. *California*, volume edited by Robert F. Heizer, pp. 570-574 (W. T. Sturtevant, general editor). Smithsonian Institution, Washington, D.C.

Brooks, Nancy Rivera. 1987. The Long Winter Of Kaiser Steel: The Industrial Empire It Once Anchored is Gone, and the Firm Struggles to Survive, Beset by an Internal Battle for Control and a Hostile Economy. In the Los Angeles Times. http://articles.latimes.com/1987-02-09/business/fi-1840_1_kaiser-steel. Site assessed March 16, 2018.

Cushing, Lincoln. 2017. Tunnels, Trains, and Tubes: Kaiser's Role in Building an Accessible Transit System. https://kaiserpermanentehistory.org/latest/tunnels-trains-and-tubes-kaisers-role-in-building-an-accessible-transit-system/. Site assessed March 16, 2018.

Dietler, John and Steven Treffers. 2015. Chapter 2: Site Context. In Abundant harvest: The Archaeology of Industry and Agriculture at San Gabriel Mission. SWCA Anthropological Research Paper No. 11. John Dietler, Heather Gibson, and James M. Potter, editors, pgs. 13-42. SWCA Environmental Consultants: Pasadena.

Jahns, R.H. 1954, Geology of the Peninsular Ranges Province, Southern California and Baja California, In *Geology of southern California: California Division of Mines an d Geology Bulletin 170*, chapter 2, p. 29-52, edited by Jahns, R.H.

Kroeber, A.L. 1976. *Handbook of the Indians of California*. Dover Publications, Inc., New York. Reprint of 1925 book.

Love, Bruce, Tang Bai "Tom", Mariuam Dahdul, and Michael Hogan. 2001. Cultural Resources Technical Report: City of Fontana General Plan. Part 1: Existing Consditi0ons. Appendix E of the 2003 City of Fontana General Plan.

McCawley, William. 1996. The First Angelinos: The Gabrielino Indians of Los Angeles. Malki Museum Press:Banning.

Michael Brandman and Associates. 2003. City of Fontana General Plan-EIR

Morgan, Scott. n.d.. SB 18: Law and Definitions CEQA: Opportunities for Tribes. http://ohp.parks.ca.gov/pages/1054/files/thposhposummit2013_day1_panel1_randolph morgan3.pdf. Site assessed March 13, 2018.

Morton, Douglas. 2003. Preliminary Geologic Map of the Fontana 7.5' Quadrangle, Riverside and San Bernardino Counties, California https://pubs.usgs.gov/of/2003/0418/. Site assessed March 14, 2018.

San Manual. n.d.. San Manual Band of Mission Indians. https://www.sanmanuel-nsn.gov/. Site assessed March 16, 2018.

Sutton, Mark Q. 2009. People and Language: Defining the Takic Expansion into Southern California. In *Pacific Coast Archaeological Society Quarterly* 41(2&3):31-93.

Sutton, Mark Q and Jill K. Gardner. 2010. Reconceptualizing the Encinitas Tradition in Southern California. In *Pacific Coast Archaeological Society Quarterly*, Volume 42 (4) pages 1-64.

Switalski, Hubert and Victoria Harvey. 2018. Cultural Resources Survey Report on Behalf of Orange County Parks of Portions of East Orange I and East Orange Ii Conservation Easements, Near Irvine Lake, Orange County, California. Report on file with the author.

Warren, Claude N. 1968. Cultural Traditions and Ecological Adaptations on the Southern California Coast. In *Archaic Prehistory in the Western United States*, edited by C. Irwin-Williams, pp. 1-14. Eastern New Mexico University Contributions in Anthropology 1(3). Portales.

5.5 GEOLOGY, SOILS, AND SEISMICITY

This section of the environmental impact report (EIR) describes the existing geology and soils conditions in the Project area and analyzes the potential for impacts associated with hazards that could be caused by seismic activity (groundshaking, landsliding, liquefaction), development on unstable geologic units or expansive soils, and potential erosion that could result from Goals, Policies, and Actions presented in the General Plan Update.

Implementation of the General Plan Update will not directly result in any specific development project; individual projects would undergo environmental review as they are proposed. As such, while no specific project is addressed in this Program EIR, this discussion will instead focus on potential impacts from geologic hazards, associated with new Goals, Policies, and Actions contained in the General Plan Update to guide future development in the City.

Information in this section is based on previous reports such as the Geologic Map of the Fontana 7.5' Quadrangle, which was produced as part of the Southern California Areal Mapping Project (SCAMP) as a joint effort by the United States Geologic Survey (USGS) and the California Geologic Survey (CGS), as well as the Fault Activity Map of California and adjacent Areas (CGS).

5.5.1 Regional Geology

The City of Fontana generally lies within the northern and northwestern portion of the Peninsular Ranges Geomorphic Province of Southern California, which is characterized by northwest-southeast trending faults, folds, and mountain ranges. During the time from the Pliocene period to the Pleistocene period (the past 2 to 3 million years), activities on the Newport-Inglewood Fault, combined with regional tectonic effects (such as uplift), climatic forces, and changes in sea level, have resulted in the formation of the underlying basement materials and structures that underlay and support the Project area. The forces that have created the geomorphology of the Project area and vicinity are still active today.

Much of the region is underlain by terrace deposits, which are unconsolidated sediments (i.e., loose soil materials, such as sand, silt, etc.) left by streams on shore benches cut by the ocean. These deposits were laid in a shallow marine to near-shore terrestrial environment in the Pleistocene timeframe (about two million to about ten thousand years ago). The source of these sediments was erosion of the rocky highlands of San Bernardino, Santa Ana, and other mountain belts. Tectonic forces associated with regional faulting from the Newport-Inglewood, Cucamonga, Chino, San Andreas, San Joaquin, and additional off-shore zones uplifted these deposits, exposing the terrace materials to erosion that removed much of their cover. In late Pleistocene time, the action of coastal plain rivers and streams dissected the terrace materials and subsequently formed "gaps." As sea levels subsequently rose with the melting of continental ice sheets, sediments filled these gaps.

5.5.2 Seismic Setting

The faulting and seismicity of Southern California is dominated by the San Andreas Fault zone. The zone separates two of the major tectonic plates that comprise the earth's crust. The Pacific Plate lies west of the fault zone. This plate is moving in a northwesterly direction relative to the North American Plate, which lies east of the fault zone. This relative movement between the two plates is the driving force of fault ruptures in western California.

There are numerous faults in Southern California that are categorized as active, potentially active, and inactive. A fault is classified as active by the state if it has either moved during the Holocene epoch (during the last 11,000 years) or is included in an Alquist-Priolo Earthquake Fault zone (as established by the California Geological Survey). A fault is classified as potentially active if it has experienced movement within the Quaternary period (during the last 1.6 million years). Faults that have not moved in the last 1.6 million years generally are considered inactive.

The severity of an earthquake generally is expressed in two ways—magnitude and intensity. The energy released, as measured on the Moment Magnitude (M_W) scale, represents the magnitude of an earthquake. The intensity of an earthquake is measured by the Modified Mercalli Intensity (MMI) scale, which emphasizes the seismic response at a subject site and measures ground-shaking severity according to damage done to structures, changes in the earth surface, and personal accounts (see Table 5.5-1).

Table 5.5-1 MMI Scale

MMI	Description
I	Detected by only sensitive instruments
II	Felt by a few people at rest
III	Felt noticeably indoors, but not always recognized as a quake; vibration like a passing truck
IV	Felt indoors by many and outdoors by few
V	Felt by most people. Some breakage of windows, dishes, and plaster
VI	Felt by all; falling plaster and chimneys; damage small
VII	Damage to buildings varies; depends on quality of construction
VIII	Walls, monuments, chimneys fall; panel walls thrown out of frames
IX	Buildings shift off foundations; foundations crack; ground cracks; underground pipes break
X	Most masonry and frame structures destroyed; ground cracks; landslides
XI	Ground fissures; pipes break; landslides; rails bent; new structures remain standing
XII	Damage total; waves seen on ground surface; objects thrown into the air
SOURCE: United States Atomic Energy Commission 1963	

Major active faults in the Study Area vicinity are listed in Table 5.5-2. Although there are no major active faults within the City boundaries, there are a number of faults that border the Lytle Creek alluvial basin, including the Chino, Cucamonga, San Andreas, and San Jacinto faults, as described below. All structures associated with the development covered by the proposed General Plan Amendment would be required by state law and regulation to comply with all adopted geotechnical design criteria.

Table 5.5-2 Major Fault Zones near Fontana

Fault Zone	M_w Magnitude
San Jacinto	7.2
Chino	
Whittier-Elsinore	6.8–7.1
San Andreas (southern)	7.8
Cucamonga	
SOURCE: California Geological Survey 1998	

Cucamonga Fault/ Sierra Madre Fault Zone. This fault system is northwest trending and generally right lateral. The fault consists of several near vertical breaks marking the southern boundary of the San Gabriel Mountains. The Cucamonga fault is part of the Sierra Madre Fault Zone. Based on historic earthquakes and evidence of Holocene activity, the fault zone is considered active.

Whittier-Elsinore Fault System. The Whittier-Elsinore Fault system consists of several steep to near-vertical faults along a zone as much as one-half mile wide. The inferred sense of movement along these faults is predominately reverse slip west of the Chino area, and right lateral strike slip to the east. Historic seismicity indicate that the fault system is active.

The San Jacinto Fault Zone. The San Jacinto Fault is a young, right lateral zone of seismic strain that has dominated fault movement in southern California for a least a century. Notwithstanding the notoriety of the San Andreas Fault, since 1857 there have been thirty-six major earthquakes identified to faults in the San Jacinto system.

San Andreas Fault. Extending more than 700 miles, the San Andreas Fault is the longest and most significant system in California. Within and south of the Transverse Ranges, the strike of the fault trends west-northwest within a nearly vertical dip. Motion along the fault is right lateral with post-Oligocene (i.e., less than 22 million years) offset of more than 150 miles. Historic seismicity, sag ponds, offset channels, and linear geomorphic features indicate that this fault system is active.

5.5.2.1 Seismicity and Faulting

Groundshaking

According to the 2016 California Building Code (CBC), the City of Fontana is in Seismic Zone 4. Seismic Zone 4 includes those areas that lie in a zone of major historic earthquakes (i.e., Mw magnitude greater than 7.0) and recent high levels of seismicity. Major damage corresponding to intensities VIII or higher on the MMI Scale should be expected within this zone. Thus, strong earthquake groundshaking is a potentially significant seismic hazard throughout the Project area. The amount of earthquake shaking at a site is a function of earthquake magnitude; the type of earthquake source (i.e., type of fault); distance between the site and the earthquake source; the geology of the site; and how the earthquake waves subside (attenuate) as they travel from their source to a given location. Larger, nearer quakes will increase the degree of groundshaking at a given location. Soil and rock type may act to amplify or attenuate seismic waves and consequent groundshaking. Generally, areas that are underlain by bedrock tend to experience less groundshaking than those underlain by unconsolidated sediments such as artificial fill.

Surface Fault Rupture

Rupture of the surface during an earthquake generally is limited to the narrow strip of land immediately adjacent to the fault on which the earthquake is occurring. Surface fault rupture may occur suddenly during an earthquake or slowly in the form of fault creep and almost always follows pre-existing faults, which are zones of weakness. Secondary surface faulting can be triggered by aquifer compaction and subsidence or by the effects of strong groundshaking triggering a slip on neighboring faults. Not all earthquakes will result in surface rupture and the *Alquist-Priolo Earthquake Fault Zone Act* instigated a statewide program to identify fault zones that are susceptible to surface rupture. Numerous rupture zones were identified in Project area.

5.5.3 Soils

Soils in the area are characteristic of the Southern California interior alluvial basins, consisting of alluvial deposits and floodplain soils. The City is underlain by the relatively young (Holocene and late Pleistocene) alluvial deposits of the Lytle Creek alluvial fan. These deposits primarily consist of unconsolidated, gray, cobbly and bouldery alluvium. In the southern reaches, the deposits are relatively fine-grained (pebbly and cobbly) and become coarser grained (cobbly and bouldery) to the north.

5.5.3.1 Expansive Soils

In addition to seismic hazards, soils can exhibit characteristics that can restrict development. Expansive soils possess a "shrink-swell" behavior that occurs in fine-grained clay sediments from the process of wetting and drying, which may result in structural damage over a long period of time. Settlement occurs when loose, soft soil material comprised of sand, silt, clay, and/or peat if

not properly engineered, has the potential to settle after a building is placed on the surface. Settlement of the loose soils generally occurs slowly, but over time can damage structures.

Expansive soils are common throughout California and can cause damage to foundations and slabs, separation of masonry, or failure of paved surfaces unless properly treated during construction. Expansive soil conditions could cause damage to facility components if they are not designed with proper engineering and grading practices. The hazard for expansive behavior is considered a low risk for alluvial fan locations because soils in these areas are frequently saturated and generally do not contain clay-sized particles. The risk is low in the Mountains Region because of the generally limited extent, shallow depth, and coarse-grained nature of soils in this area.

5.5.3.2 Liquefaction

Liquefaction is a phenomenon in which saturated soils lose strength and cohesion when subjected to dynamic forces, such as shaking during an earthquake. Liquefaction can occur in unsaturated soils with low cohesion, such as uniformly fine sand. Liquefaction potential is greatest in areas with shallow groundwater and saturated soils. Soil type, climate, topography, slope geometry, and excavations influence the potential for slope failures and landslides. Liquefaction and related phenomena have been responsible for a tremendous amount of damage during historical earthquakes as soil cohesion is lost, along with the support that it normally supplies to building foundations (Youd 1973). Ground failure resulting from liquefaction can include sand boils, ground settlement, ground cracking, lateral spreading, slope toe failure, and ground warping (Youd and House 1978).

Alluvial deposits in San Bernardino County generally contain geologically young, loose, sedimentary deposits, which have the potential to liquefy during intense seismic shaking. Liquefaction typically occurs at depths less than 50 feet below ground surface (bgs), with the most susceptible conditions occurring in sandy soils with less than 15 percent silt and clay at depths shallower than 30 feet bgs (Rosinski 2005). Saturated deposits that are deeper than 50 feet bgs generally are stable regardless of their grain-size distribution. The CGS Seismic Hazard Zone Maps for Study Area identify that areas within the basin are potentially subject to liquefaction. Site-specific geotechnical investigation would determine, on a case-by-case basis, the potential for liquefaction in a given area to ensure that final project design incorporates all necessary and appropriate engineering features to reduce the potential hazards associated with liquefaction.

5.5.3.3 Subsidence

Soil subsidence at the land surface can result from both natural and man-made phenomena. Natural phenomena that may induce subsidence include tectonic deformation and seismically induced settlements (liquefaction); soil consolidation; oxidation or dewatering of organic-rich soils; and collapse of subsurface cavities. Human activities that may help induce subsidence

include decreases in pore pressure caused by the excessive withdrawal of subsurface fluids (pumping), including water and hydrocarbons.

The groundwater basin underlying the project area contains a substantial amount of gravel and broken conglomerate in its framework, making it unlikely that, as a result of the accumulated overdraft, the aquifer would compact causing the overlying ground to subside. Potential subsidence is one of several reasons that groundwater overdraft should be minimized. Site-specific geotechnical investigation would, on a case-by-case basis, determine the potential for subsidence in a given area to ensure that final project design incorporates all necessary and appropriate engineering features to reduce the potential for subsidence-related hazards. However, as the accumulated overdraft range is not anticipated to change as a result of the General Plan Update, the potential for subsidence within the basin would not be expected to change significantly.

5.5.3.4 Landslides

Landslides, rock falls, and debris flows are all forms of mass wasting, the movement of soils and rock under the influence of gravity. A landslide may occur if source material on a slope is triggered by some mechanism. Source materials include fractured and weathered bedrock and loose soils. Triggering mechanisms include earthquakes, saturation from rainfall, and erosion. Post fire erosion rates may be more than 50 to 100 times greater than on a well-vegetated watershed (Radtke 1983).

Shaking during an earthquake may lead to seismically induced landslides, especially in areas that have previously experienced landslides or slumps, in areas of steep slopes, or in saturated hillsides. The City of Fontana is generally flat and not at risk from the threat of landslides. Potential areas where seismically-induced landslides could occur are in the foothill portions of the basin. Still, site-specific geotechnical investigation would, on a case-by-case basis, determine the potential for landslides in a given area to ensure that final project design incorporates all necessary and appropriate engineering features to reduce the potential for landslide-related hazards.

5.5.3.5 Soil Erosion

Erosion refers to the removal of soil from exposed bedrock surfaces by water or wind. The effects of erosion are intensified with an increase in slope (as water moves faster, it gains momentum to carry more debris), the narrowing of runoff channels (which increases the velocity of water), and by the removal of groundcover (which leaves the soil exposed to erosive forces). Surface improvements, such as paved roads and buildings, decrease the potential for erosion onsite, but can increase the rate and volume of runoff, potentially causing off-site erosion.

5.5.3.6 Soil Settlement

Soil settlement is the condition where soils deform in a vertical direction when a vertical load is placed on top of it. The compression of the soil bed by the vertical load results from the characteristics of the soil particles that are contained in the soil bed, as the spaces that are filled with either air or water between the soil particles are squeezed out. Site-specific geotechnical investigation would, on a case-by-case basis, determine the potential for soil settlement in a given area to ensure that final project design incorporates all necessary and appropriate engineering features to reduce the potential geologic hazards.

5.5.4 Thresholds of Significance

Implementation of development under the General Plan Update may have a potentially significant impact to geology and geologic hazards if it were to result in any of the following:

- Expose people or structures to potential substantial adverse effects involving risk of loss, injury, death involving:
  - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault
  - Strong seismic ground shaking
  - Seismic-related ground failure, including liquefaction
  - Landslides
  - Result in substantial soil erosion or the loss of topsoil
- 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
- Be located on expansive soil, as defined in Table 18-1-A of the CBC (2001), creating substantial risks to life or property
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater

5.5.5 Environmental Impacts

Would the project create a significant hazard to the public or the environment through the exposure of people or structures to potential substantial adverse effects involving risk of loss, injury or death involving rupture of a known earthquake fault or strong seismic shaking or seismic-related ground failure or landslides? Or result in substantial soil erosion?

Active and potentially-active faults in Southern California are capable of producing seismic shaking throughout the Project area, and it is anticipated that this area would periodically experience ground acceleration as a result of exposure to small and moderate magnitude earthquakes occurring on active distant and blind thrust faults. New and existing development

would be subject to earthquakes that could damage facilities and/or affect reliable use of facilities, including faults identified on the Alquist-Priolo Earthquake Fault Zoning Map.

Primary earthquake hazards include damage from ground displacement along a fault zone, severe ground shaking, and induced secondary hazards such as liquefaction in areas that are underlain by unconsolidated alluvial deposits, seismically induced differential settlement, lurching, landslides, and rockfalls.

In addition to that described above, as groundshaking hazards are near surface phenomena, pipelines and other infrastructure are particularly susceptible to damage. Damage or rupture of pipelines during a seismic event could result in underground and surface release of water, which could result in localized flooding, erosion, liquefaction, differential settlement, and lateral spreading.

The General Plan Update guides the planning of new walkable mixed-use land categories, which promotes development that may result in potential exposure to geologic hazards greater than current conditions. The two new walkable-mixed used land categories are in the Downtown Area Plan and promote pedestrian and bicycle friendly development, increase housing diversity, increase transit use and ensure economic vitality in the downtown and along important corridors. Compliance with federal, state, county, and local regulations relating to the geologic hazards would reduce the potential risk of potential impacts from geologic hazards to a less than significant level. The 2016 CBC Title 24 Section 3417: Earthquake Evaluation and Design for Retrofit of Existing Buildings and the 2016 International Building Codes (IBC) regulate the infrastructure in the City of Fontana. Furthermore, adherence to the mitigation program included in the City's Local Hazard Mitigation Plan (LHMP) to protect life, property and the environment would further reduce potential impacts relative to geologic resources and geologic hazards (City of Fontana, 2017; Appendix F). The intent of hazard mitigation is to reduce and/or eliminate loss of life and property. Hazard mitigation is defined by the Federal Emergency Management Agency (FEMA) as "any action taken to reduce or eliminate the long-term rise to human life and property from natural hazards." With the approved and adopted LHMP, the City of Fontana is eligible for federal disaster mitigation funds/grants aimed to reduce and or eliminate/risk.

Because the City is in Seismic Zone 4 of the 2016 CBC, structures would be designed in accordance with parameters given within Chapter 16 of the current CBC. In addition, as required by CBC Chapter 16, Division IV for the construction of new buildings and/or structures, specific engineering design and construction measures would be implemented to anticipate and avoid the potential for adverse impacts to human life and property caused by seismically induced groundshaking. Thus, the majority of earthquake-related hazards would be minimized by engineering design, compliance with local, state, and/or federal regulations pertaining to geological hazards, or avoidance of high hazard areas.

The General Plan Update would not create a significant hazard to the public or the environment through the exposure of people or structures to potential substantial adverse effects. The General Plan Update includes goals, policies, and actions that would further reduce risks from geologic hazards. Applicable Goals, Policies, and Actions from the General Plan Update include the following:

Table 5.5-3 Applicable Goals, Policies, and Actions

Goals & Policies	Action
Noise and Safety Element	
Goal 4: Seismic injury and loss of life, property damage, and other impacts caused by seismic shaking, fault rupture, ground failure, earthquake-induced landslides, and other earthquake-induced ground deformation are minimized in the city of Fontana.	
• The City shall monitor development or redevelopment in areas where faults have been mapped through the city. • The City shall continue to ensure that current geologic knowledge and peer (third party) review are incorporated into the design, planning, and construction stages of a project and that site- specific data are applied to each project. • The City shall continue to ensure to the fullest extent possible that, in the event of a major disaster, essential structures and facilities remain safe and functional, as required by current law. Essential facilities include hospitals, police stations, fire stations, emergency operation centers, communication centers, generators and substations, and reservoirs.	A. The City shall strive to ensure that the design of new structures and the performance of existing structures addresses the appropriate earthquake hazards. B. The City shall continue to ensure to the fullest extent possible that in the event of a major disaster dependent care and high-occupancy facilities will remain safe. C. The City shall continue earthquake strengthening and provisions for alternate or back-up essential services, such as water, sewer, electricity, and natural gas pipelines and connections throughout the city. D. The City shall ensure that all residents and business owners in the City have access to information regarding seismic hazards.
Goal 9: The City maintains regulations, plans, protocols and emergency training to reduce hazards and risks and to meet state and federal requirements for emergency assistance.	
• Keep hazard-mitigation and emergency services programs up to date. • Continue to provide hazard and risk mitigation and emergency training to public employees and the public at large.	A. Update the local HMP as required to meet FEMA requirements. B. Explore the opportunity to create Business Emergency Response Training in cooperation with the Fire Department.

Would the project be located on a geologic unit or soil that is unstable our would become unstable, or potentially result in a potentially significant risk from on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse? Would the project be located in an area of expansive soils?

The General Plan Update does not consider or analyze specific development projects; therefore, the actual potential for future construction sites or developments associated with the General Plan Update are unknown. However, given the relatively stable geology and soils within the City, it is unlikely that there would be a potential risk that represents a significant change or increase from the conditions that are currently present.

Compliance with federal, state, and local regulations would minimize the risks associated with the potential risk from landslides, subsidence, liquification, or collapse relative to existing conditions. San Bernardino County has adopted the 2016 CBC to regulate development in the hillside areas in the City and County. According the City of Fontana 2017 LHMP, there have been no reported historical occurrences of landslides in the City of Fontana. The only areas susceptible to landslips are the southern Jurupa hillsides and the northern part of the city close to the San Bernardino National Forest, but there is a low probability of this hazard affecting these areas in the future. Therefore, future development under the General Plan Update would result in a less than significant impact relative to these potential risks.

Adherence to building codes and development that includes site specific geotechnical studies that would be prepared for each specific future project as mandated by the CBC would identify and minimize risks from areas of unstable soils by ensuring the incorporation of recommendations from the site-specific geotechnical investigations into design of plan for those future projects. Overall, the Planning Area would not be located on a geologic unit or soil that is unstable. In addition, the General Plan Update includes goals, policies, and actions would further reduce risks from geologic hazards. Accordingly, impacts are less than significant.

Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

The General Plan Update does not consider or analyze specific development projects; therefore, the actual potential for future construction sites or developments associated with the Update are unknown. The City of Fontana has limited septic systems and given the relatively stable geology and soils within the City, it is unlikely that there would be a potential risk that represents a significant change or increase from the conditions that are currently present. Overall, the City of Fontana is served by a sewer system and the use of septic systems or other alternative wastewater disposal systems would be managed on a case-by-case basis.

5.5.6 Mitigation Measures

No mitigation measures are required that would further reduce the identified less than significant impacts.

5.5.7 References

Borderdt, D., et al. 1975. Maximum Earthquake Intensity Predicted on a Regional Scale. United States Geological Survey, Miscellaneous Field Investigations Map MF 09, scale 1: 125,000.

California. 1972. Alquist-Priolo Earthquake Fault Zoning Act. Signed into law December 22, 1972; amended 1974, 1975, 1976, 1979, 1991, 1993, and 1997. California Public Resources Code, Division 2, "Geology, Mines, and Mining," Chapter 7.5, "Earthquake Fault Zones," Sections 2621 through 2630.

California Department of Conservation. 2010. Fault Activity Map of California. http://maps.conservation.ca.gov/cgs/fam/

California Geological Survey. 1998. Maps of Known Active Fault Near-Source Zones in California.

CCCarto. 2017. Faults in the San Bernardino area. www.cccarto.com/faults/sb_faults/

City of Fontana, 2017. Local Hazard Mitigation Plan.

Hart, E.W., and W.A. Bryant. 2003. Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps. California Geological Survey (formerly the Division of Mines and Geology). Special Publication 42, 1997 Edition. Supplements 1 and 2 added 1999, Supplement 3 released 1 May 2003, updated on-line 7 October.

International Conference of Building Officials. 1994. Chapter 16, Structural Forces (earthquake provisions); Chapter 18, Foundations and Retaining Walls; Appendix Chapter A33, Evacuation and Grading. Uniform Building Code. Volumes 1, 2, & 3. Whittier, CA.

Jennings, C.W. 1994. Fault Activity Map of California and Adjacent Areas, with Locations and Ages of Recent Volcanic Eruptions. California Geological Survey. Geologic Data Map No. 6. Scale 1:750,000. Accompanied by 92 pages of explanatory text.

Leake, S.A., Land Subsidence from Ground-Water Pumping, United States. Geological Survey, http://geochange.er.usgs.gov/sw/changes/anthropogenic/subside, Last modified, January 2004.

Oakeshott, G.B. 1978. California's Changing Landscapes: A Guide to the Geology of the States. 2nd Edition. McGraw-Hill Book Company: San Francisco. 378 pages.

Radtke, Klaus W. 1983. Living More Safely in the Chaparral-Urban Interface. Technical Report PSW-67. U.S. Department of Agriculture.

Rosinski, A.M., California Geological Survey, Geologic and Geotechnical Characterization of Sediment for Liquefaction-Induced Deformation Hazard Maps in the Northern Santa Clara Valley, California, Paper No. 39-15, Geological Society of America, Cordilleran Section—101st Annual Meeting (April 29, 2005).

United States Atomic Energy Commission. 1963. Nuclear Reactors and Earthquakes. TID-7024. Washington, D.C.

Youd, T.L. 1973. Liquefaction, Flow and Associated Ground Failure. U.S. Geological Survey. Circular 688. 12 pages.

Youd, T.L., and S.N. House. 1978. Historical Ground Failures in Northern California Triggered by Earthquakes. U.S. Geological Survey. Professional Paper. 993 pages.

5.6 GREENHOUSE GAS EMISSIONS

This section discusses the existing greenhouse gas setting and analyzes potential effects that could result from implementation of the proposed General Plan Update.

5.6.1 Environmental Setting

5.6.1.1 Climate Change

Climate change is the distinct change in measures of climate for a long period of time. Climate change can result from natural processes and from human activities. Natural changes in the climate can be caused by indirect processes such as changes in the Earth's orbit around the Sun or direct changes within the climate system itself (i.e., changes in ocean circulation). Human activities can affect the atmosphere through emissions of gases and changes to the planet's surface. Emissions affect the atmosphere directly by changing its chemical composition, while changes to the land surface indirectly affects the atmosphere by changing the way the Earth absorbs gases from the atmosphere. The term climate change is preferred over the term global warming because climate change conveys the fact that other changes can occur beyond just average increase in temperatures near the Earth's surface. Elements that indicate that climate change is occurring on Earth include:

- Rising of global surface temperatures by 1.3° Fahrenheit (F) over the last 100 years
- Changes in precipitation patterns
- Melting ice in the Arctic
- Melting glaciers throughout the world
- Rising ocean temperatures
- Acidification of oceans
- Range shifts in plant and animal species

Climate change is intimately tied to the Earth's greenhouse effect. The greenhouse effect is a natural occurrence that helps regulate the temperature of the planet. The majority of radiation from the Sun hits the Earth's surface and warms it. The surface in turn radiates heat back towards the atmosphere, known as infrared radiation. Gases and clouds in the atmosphere trap and prevent some of this heat from escaping back into space and re-radiate it in all directions. This process is essential to supporting life on Earth because it keeps the planet approximately 60° F warmer than without it. Emissions from human activities since the beginning of the industrial revolution (approximately 150 years) are adding to the natural greenhouse effect by increasing the gases in the atmosphere that trap heat, thereby contributing to an average increase in the Earth's temperature. Human activities that enhance the greenhouse effect are detailed below.

5.6.1.2 Greenhouse Gases

The greenhouse effect is caused by a variety of greenhouse gases. Greenhouse gases (GHGs) occur naturally and from human activities. Greenhouse gases produced by human activities include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Since the year 1750, it is estimated that the concentrations of carbon dioxide, methane, and nitrous oxide in the atmosphere have increased over 36 percent, 148 percent, and 18 percent, respectively, primarily due to human activity. The primary GHGs are discussed below (US EPA 2015).

Carbon Dioxide

CO_2 is emitted and removed from the atmosphere naturally. Animal and plant respiration involves the release of carbon dioxide from animals and its absorption by plants in a continuous cycle. The ocean-atmosphere exchange results in the absorption and release of CO_2 at the sea surface. Carbon dioxide is also released from plants during wildfires. Volcanic eruptions release a small amount of CO_2 from the Earth's crust.

Human activities that affect carbon dioxide in the atmosphere include burning of fossil fuels, industrial processes, and product uses. Combustion of fossil fuels is the largest source of carbon dioxide emissions in the United States, accounting for approximately 85 percent of all equivalent emissions. Because of the fossil fuels used, the largest of these sources are electricity generation and transportation. When fossil fuels are burned, the carbon stored in them is released into the atmosphere entirely as CO_2. Emissions from on-site industrial activities also emit carbon dioxide such as cement, metal, and chemical production and use of petroleum produced in plastics, solvents, and lubricants.

Methane

Methane (CH_4) is emitted from human activities and natural sources. Natural sources of methane include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, soils, and wildfires. Human activities that cause methane releases include fossil fuel production, animal digestive processes from farms, manure management, and waste management. It is estimated that 50 percent of global methane emissions are human generated. Wetlands are the primary producers of methane in the world because the habitat is conducive to bacteria that produce methane during decomposition of organic material. Methane is produced from landfills as solid waste decomposes. Methane is a primary component of natural gas and is emitted during its production, processing, storage, transmission, distribution, and use. Decomposition of organic material in manure stocks or in liquid manure management systems also releases methane. Releases from animal digestive processes at agricultural operations are the primary source of human-related methane emissions.

Nitrous Oxide

Anthropogenic (human) sources of nitrous oxide include agricultural soil management, animal manure management, sewage treatment, combustion of fossil fuels, and production of certain acids. N_2O is produced naturally in soil and water, especially in wet, tropical forests. The primary human-related source of N_2O is agricultural soil management due to use of synthetic nitrogen fertilizers and other techniques to boost nitrogen in soils. Combustion of fossil fuels (mobile and stationary) is the second leading source of nitrous oxide, although parts of the world where catalytic converters are used (such as California) have significantly lower levels than those areas that do not.

High Global Warming Potential Gases

High global warming potential (GWP) gases (or fluorinated gases) are entirely manmade and are mainly used in industrial processes. HFCs, PFCs, and SF_6 are high GWP gases. These types of gases are used in aluminum production, semiconductor manufacturing, electric power transmission, magnesium production and processing, and in the production of hydrochlorofuorocarbon-22 (HCFC-22). High GWP gases are also used as substitutes for ozone-depleting gases like chlorofluorocarbons (CFCs) and halons. Use of high GWP gases as substitutes for ozone-depleting substances is the primary use of these gases in the United States.

Water Vapor

It should be noted that water vapor is also a significant GHG in the atmosphere; however, concentration of water vapor in the air is primarily dependent on air temperature and cannot be influenced by humans. GHGs behave differently in the atmosphere and contribute to climate change in different ways. Some gases have more potential to reflect infrared heat back towards the earth while some persist in the atmosphere longer than others. To equalize the contribution of GHGs to climate change, the Intergovernmental Panel on Climate Change (IPCC) devised a weighted metric to compare all greenhouse gases to carbon dioxide (IPCC 2007).

The weighting depends on the lifetime of the gas in the atmosphere and its radiative efficiency. As an example, over a time horizon of 100-years, emissions of nitrous oxide will contribute to climate change 298 times more than the same amount of emissions of carbon dioxide while emissions of HFC-23 would contribute 14,800 times more than the same amount of carbon dioxide. These differences define a gas's GWP. Table 5.6-1 (Global Warming Potential of Greenhouse Gases) identifies the lifetime and GWP of select GHGs. The lifetime of the GHG represents how many years the GHG will persist in the atmosphere. The GWP of the GHG represents the GHG's relative potential to induce climate change as compared to carbon dioxide.

Table 5.6-1 Global Warming Potential (GWP) of Greenhouse Gases (GHG)

GHG	Lifetime (yrs)	GWP
Carbon Dioxide	50-200	1
Methane	12	25
Nitrous Oxide	114	298
HFC-23	270	14,800
HFC-134a	14	1,430
HFC-152a	1.4	124
PFC-14	50,000	7,390
PFC-116	10,000	12,200
Sulfur Hexafluoride	3,200	22,800
SOURCE: IPCC 2007		

Carbon Sequestration

Carbon sequestration is the process by which plants absorb CO_2 from the atmosphere and store it in biomass like leaves and grasses. Agricultural lands, forests, and grasslands can all sequester carbon dioxide, or emit it. The key is to determine if the land use is emitting carbon dioxide faster than it is absorbing it. Young, fast-growing trees are particularly good at absorbing more than they release and are known as a sink. Agricultural resources often end up being sources of carbon release because of soil management practices. Deforestation contributes to carbon dioxide emissions by removing trees, or carbon sinks, that would otherwise absorb CO_2. Another form of sequestration is geologic sequestration. This is a manmade process that results in the collection and transport of CO_2 from industrial emitters (i.e. power plants) and injecting it into underground reservoirs.

Climate Change and California

Anticipated impacts to California have been identified in the 2009 California Climate Adaptation Strategy prepared by the California Natural Resources Agency (CNRA) through extensive modeling efforts (CNRA 2009). General climate changes in California indicate that:

- California is likely to get hotter and drier as climate change occurs with a reduction in winter snow, particularly in the Sierra Nevada Mountains
- Some reduction in precipitation is likely by the middle of the century
- Sea-levels will rise to an estimated 55 inches
- Extreme events such as heat waves, wildfires, droughts, and floods will increase
- Ecological shifts of habitat and animals are already occurring and will continue to occur

It should be noted that changes are based on the results of several models prepared under different climatic scenarios; therefore, discrepancies occur between the projections. The potential impacts of global climate change in California are detailed below.

Public Health and Welfare

Concerns related to public health and climate change includes higher rates of mortality and morbidity, change in prevalence and spread of disease vectors, decreases in food quality and security, reduced water availability, and increased exposure to pesticides. These concerns are all generally related to increase in ambient outdoor air temperature, particularly in summer.

Higher rates of mortality and morbidity could arise from more frequent heat waves at greater intensities. Health impacts associated with extreme heat events include heat stroke, heat exhaustion, and exacerbation of medical conditions such as cardiovascular and respiratory diseases, diabetes, nervous system disorders, emphysema, and epilepsy. Climate change would result in degradation of air quality promoting the formation of ground-level pollutants, particularly ozone. Degradation of air quality would increase the severity of health impacts from criteria and other air pollutants discussed in Section 5.2 (Air Quality). Temperature increases and increases in carbon dioxide are also expected to increase plant production of pollens, spores, and fungus. Pollens and spores could induce or aggravate allergic rhinitis, asthma, and obstructive pulmonary diseases.

Precipitation projections suggest that California will become drier over the next century due to reduced precipitation and increased evaporation from higher temperatures. These conditions could result in increased occurrences of drought. Surface water reductions will increase the need to pump groundwater, reducing supplies and increasing the potential for land subsidence.

Precipitation changes are also suspected to impact the Sierra snowpack (see Water Management herein). Earlier snow melts could coincide with the rainy season and could result in failure of the flood control devices in that region. Flooding can cause property damage and loss of life for those affected. Increased wildfires are also of concern as the State dries over time. Wildfires can also cause property damage, loss of life, and injuries to citizens and emergency response services.

Sea-level rises would also threaten human health and welfare. Flood risks will be increased in coastal areas due to strengthened storm surges and greater tidal damage that could result in injury and loss of property and life. Gradual rising of the sea will permanently inundate many coastal areas in the state.

Other concerns related to public health are changes in the range, incidence, and spread of infectious, water-borne, and food-borne diseases. Changes in humidity levels, distribution of surface water, and precipitation changes are all likely to shift or increase the preferred range of disease vectors (i.e. mosquitoes). This could expose more people and animals to potential for vector-borne disease.

Biodiversity and Habitat

Changes in temperature will change the livable ranges of plants and animals throughout the state and cause considerable stress on these species. Species will shift their range if appropriate habitat is available and accessible if they cannot adapt to their new climate. If they do not adapt or shift, they face local extirpation or extinction. As the climate changes, community compositions and interactions will be interrupted and changed. These have substantial implications on the ecosystems in the state. Extreme events will lead to tremendous stress and displacement on affected species. This could make it easier for invasive species to enter new areas, due to their ability to more easily adapt. Precipitation changes would alter stream flow patterns and affect fish populations during their life cycle. Sea level rises could impact fragile wetland and other coastal habitat.

Water Management

Although disagreement among scientists on the causes and effects of long-term precipitation patterns in the State has occurred, it is generally accepted by scientists that rising temperatures will impact California's water supply due to changes in the Sierra Nevada snowpack. Currently, the State's water infrastructure is designed to both gather and convey water from melting snow and to serve as a flood control device. Snowpack melts gradually through spring warming into early summer, releasing an average of approximately 15 million acre-feet of water. The State's concern related to climate change is that due to rising temperatures, snowpack melt will begin earlier in the spring and will coincide with the rainy season. The combination of precipitation and snowmelt would overwhelm the current system, requiring tradeoffs between water storage and flood protection to be made. Reduction in reserves from the Sierra Nevada snowpack is troublesome for California and particularly for Southern California. Approximately 75-percent of California's available water supply originates in the northern third of the state while 80 percent of demand occurs in the southern two-thirds. There is also concern that rising temperatures will result in decreasing volumes from the Colorado River basin. Colorado River water is important to Southern California because it supplies water directly to Metropolitan Water District of Southern California.

Agriculture

California is the most agriculturally productive state in the U.S. resulting in more than 37 billion dollars in revenue in 2008. California is the nation's leading producer of nearly 80 crops and livestock commodities, supplying more than half of the nation's fruit and vegetables and over 90 percent of the nation's production of almonds, apricots, raisin grapes, olives, pistachios, and walnuts. Production of crops is not limited to the Central Valley but also occurs in Southern California. Strawberries and grapes are grown in San Bernardino and Riverside Counties. Orange County and San Diego County also contribute to strawberry production. Cherries are also grown in Los Angeles and Riverside County. Anticipated impacts to agricultural resources are mixed when compared to the potentially increased temperatures, reduced chill hours, and changes in precipitation associated with climate change. For example, wheat, cotton, maize, sunflower,

and rice are anticipated to show declining yields as temperatures rise. Conversely, grapes and almonds would benefit from warming temperatures. Anticipated increases in the number and severity in heat waves would have a negative impact on livestock where heat stress would make livestock more vulnerable to disease, infection and mortality. The projected drying trend and changes in precipitation are a threat to agricultural production in California. Reduced water reliability and changes in weather patterns would impact irrigated farmlands and reduce food security. Furthermore, a drying trend would increase wildfire risk. Overall, agriculture in California is anticipated to suffer due to climate change impacts.

Forestry

Increases in wildfires will substantially impact California's forest resources that are prime targets for wildfires. This can increase public safety risks, property damage, emergency response costs, watershed quality, and habitat fragmentation. Climate change is also predicted to affect the behavior of plant species including seed production, seedling establishment, growth, and vigor due to rising temperatures. Precipitation changes will affect forests due to longer dry periods and moisture deficits and drought conditions that limit seedling and sapling growth. Prolonged drought also weakens trees, making them more susceptible to disease and pest invasion.

Transportation and Energy Infrastructure

Higher temperatures will require increased cooling, raising energy production demand. Higher temperatures also decrease the efficiency of distributing electricity and could lead to more power outages during peak demand. Climate changes would impact the effectiveness of California's transportation infrastructure as extreme weather events damage, destroy, and impair roadways and railways throughout the state causing governmental costs to increase as well as impacts to human life as accidents increase. Other infrastructure costs and potential impacts to life would increase due to the need to upgrade levees and other flood control devices throughout the state. Infrastructure improvement costs related to climate change adaptation are estimated in the tens of billions of dollars**.**

Assembly Bill 32 (AB 32)

To further the goals established in Executive Order S-3-05, the Legislature enacted AB 32, the California Global Warming Solutions Act of 2006, which Governor Schwarzenegger signed on September 27, 2006. The GHG emissions limit is equivalent to the 1990 levels, which are to be achieved by 2020.

CARB has been assigned to carry out and develop the programs and requirements necessary to achieve the goals of AB 32. Under AB 32, CARB must adopt regulations requiring the reporting and verification of statewide GHG emissions. This program will be used to monitor and enforce compliance with the established standards. CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 allows CARB to adopt market-based compliance mechanisms to meet the specified

requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted. The first action under AB 32 resulted in the adoption of a report (June 21, 2007) listing early action GHG emission reduction measures. The early actions include three specific GHG control rules that meet the narrow legal definition of "discrete early action GHG reduction measures":

- A low-carbon fuel standard to reduce the "carbon intensity" of California fuels;
- Reduction of refrigerant losses from motor vehicle air conditioning system maintenance to restrict the sale of "do-it-yourself" automotive refrigerants;
- Increased methane capture from landfills to require broader use of state-of-the-art methane capture technologies.

On October 25, 2007, CARB approved an additional six early action GHG reduction measures under AB 32, which were also considered "discrete early action GHG reduction measures":

- Reduction of aerodynamic drag, and thereby fuel consumption, from existing trucks and trailers through retrofit technology;
- Reduction of auxiliary engine emissions of docked ships by requiring port electrification;
- Reduction of PFCs from the semiconductor industry;
- Reduction of propellants in consumer products (e.g., aerosols, tire inflators, and dust removal products);
- Requirements that all tune-up, smog check, and oil change mechanics ensure proper tire inflation as part of overall service in order to maintain fuel efficiency;
- Restriction on the use of SF6 from non-electricity sectors if viable alternatives are available.

As required under AB 32, on December 6, 2007, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was set at 427 MMTCO2E. In addition to the 1990 emissions inventory, CARB also adopted regulations requiring mandatory reporting of GHGs for large facilities that account for 94 percent of GHG emissions from industrial and commercial stationary sources in California. About 800 separate sources fall under the new reporting rules and include electricity generating facilities, electricity retail providers and power marketers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and other industrial sources that emit CO_2 in excess of specified thresholds.

AB 32 Scoping Plan

On December 11, 2008, CARB approved the Climate Change Proposed Scoping Plan: A Framework for Change to achieve the goals of AB 32. The scoping plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. The scoping plan evaluates opportunities for sector-specific reductions, integrates all CARB and CAT early actions and additional GHG reduction measures by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program.

The key elements of the scoping plan include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions;
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the LCFS;
- Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of California's long-term commitment to AB 32 implementation.

In a report prepared on September 23, 2010, CARB indicates that 40 percent of the reduction measures identified in the Scoping Plan have been secured (CARB 2010a). CARB held the hearing for the cap-and-trade program rulemaking on December 16, 2010. The cap-and-trade program began on January 1, 2012 after CARB completed a series of activities that dealt with the registration process, compliance cycle, and tracking system; however, covered entities will not have an emissions obligation until 2013 (CARB 2015). ARB conducted its first quarterly auction on November 14, 2012 with its most recent auction issued on February 21, 2018. ARB is also currently working on the low carbon fuel standard where public hearings and workshops are currently being conducted. In August 2011, the Scoping Plan was reapproved by CARB with the program's environmental documentation.

In 2017, CARB released its Climate Change Scoping Plan Update which recommends that local governments target 6 MTCO2E per capita per year in 2030 and 2 MTCO2E per capita per year in 2050. These revised targets represent benchmarks, consistent with prevailing climate science. Key elements of the revised scoping plan include:

- Enhance industrial efficiency and competitiveness
- Prioritize transportation sustainability
- Continue leading on clean energy
- Put waste resources to beneficial use
- Support resilient agricultural and rural economies and natural and working lands
- Secure California's water supplies
- Cleaning the air and public health
- Successful example of carbon pricing and investment
- Fostering global action

Executive Orders S-3-05 and S-3-15

In 2005, Executive Order S-3-05 established California's GHG emissions reduction targets: GHG emissions should be reduced to 2000 levels by 2010; GHG emissions should be reduced to 1990 levels by 2020; and GHG emissions should be reduced to 80 percent below 1990 levels by 2050. The California Environmental Protection Agency (CalEPA) Secretary is required to coordinate efforts of various agencies to collectively and efficiently reduce GHGs. The California Climate Action Team (CAT) is responsible for implementing global warming emissions reduction programs. Representatives from several State agencies comprise the CAT.

Executive Order S-3-15 issued in 2015 established an interim target to reduce GHG emissions to 40 percent below 1990 levels by 2030. In 2016, the Legislature passed Senate Bill (SB) 32, which codified the 2030 GHG emissions reduction target. To reflect this target, CARB's 2017 Climate Change Scoping Plan Update was developed as referenced above.

Senate Bill 375 (SB 375)

In August 2008, the legislature passed and on September 30, 2008, Governor Schwarzenegger signed, SB 375, which addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. Regional GHG reduction targets for the automobile and light-duty truck sector for 2020 and 2035, as determined by CARB, are required to consider the emission reductions associated with vehicle emission standards (see AB 1493), the composition of fuels (see Executive Order S-1-07), and other CARB-approved measures to reduce GHG emissions. Regional metropolitan planning organizations (MPOs) will be responsible for preparing a sustainable communities' strategy (SCS) within their regional transportation plan (RTP).

The goal of the SCS is to establish a development plan for the region, which, after considering transportation measures and policies, will achieve, if feasible, the GHG reduction targets. If a SCS is unable to achieve the GHG reduction target, an MPO must prepare an alternative planning strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies. SB 375 provides incentives for streamlining CEQA requirements by substantially reducing the requirements for "transit priority projects," as specified in SB 375, and eliminating the analysis of the impacts of certain residential projects on global warming and the growth-inducing impacts of those projects when the projects are consistent with the SCS or alternative planning strategy.

On September 23, 2010, CARB adopted the SB 375 targets for the regional MPOs. Achieving these goals through adoption of a SCS will be the responsibility of the MPOs. CARB's targets called for the Southern California Association of Governments (SCAG) region, the MPO in which the Planning Area is located, to reduce per capita emissions 8 percent by 2020 and 13 percent by 2035 based on a 2005 baseline.

Senate Bill 535 (SB 535)

The Office of Environmental Health Hazard Assessment (OEHHA), through its SB 535 Disadvantaged Communities Program, has identified parts of Fontana as having disproportionate impacts of air emissions already occurring in the City (OEHHA, 2017). Disadvantaged communities in California are specifically targeted for investment of proceeds from the State's cap-and-trade program. These investments are aimed at improving public health, quality of life, and economic opportunity in California's most burdened communities at the same time reducing pollution that causes climate change.

Corporate Average Fuel Economy (CAFE)

Congress has increased the corporate average fuel economy (CAFE) of the U.S. automotive fleet. In December 2007, President Bush signed a bill raising the minimum average miles per gallon for cars, sport utility vehicles, and light trucks to 35 miles per gallon by 2020. This increase in CAFE standard will create a substantial reduction in GHG emissions from automobiles, which is the largest single emitting GHG sector in California.

South Coast Air Quality Management District (SCAQMD)

The City of Fontana is in the Southern California Air Basin, which is under the jurisdiction of the SCAQMD. The SCAQMD is the lead agency responsible for air quality planning and regulation and is also involved in the development of models and emissions thresholds that can be used to address GHG emissions. SCAQMD only has authority over GHG emissions from development projects that include air quality permits.

In 2008, SCAQMD formed a Working Group to identify GHG emissions thresholds for land use projects that could be used by local lead agencies in the Southern California Air Basin. The Working Group developed several different options that are contained in the SCAQMD Draft Guidance Document – Interim CEQA GHG Significance Threshold. Although the SCAQMD Board has not approved the thresholds, the Guidance Document provides evidence supporting the approaches to significance of GHG emissions that can be considered by the lead agency in adopting its own threshold.

California Adaptation Planning Guide (APG)

The California Adaptation Planning Guide (APG) provides guidance and support for communities addressing the unavoidable consequences of climate change. According to the APG (State of California 2012), communities located in the Desert region, such as the City of Fontana, should consider evaluating the following climate change impacts:

- Reduced water supply
- Increased temperature
- Reduced precipitation
- Diminished snowpack

- Wildfire risk
- Public health and social vulnerability
- Stress on special-status species

California Green Building Standards Code (CALGreen)

California has adopted regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively level even with rapid population growth. California Green Building Standards Code (CALGreen) is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings that went in effect on January 1, 2011, and is administered by the California Building Standards Commission. CALGreen is updated on a regular basis, with the most recent update consisting of the 2016 California Green Building Code Standards that became effective January 1, 2017.

The City of Fontana has adopted the 2016 Green Building Code Standards Title 24, Part 6. The standards contain energy and water efficiency requirements (and indoor air quality requirements) for newly constructed buildings, additions to existing buildings, and alterations to existing buildings. The Municipal Code provides for development that is consistent with the 2016 California Building Code Standards.

City of Fontana Local Hazard Mitigation Plan

In 2017, the City of Fontana updated their Local Hazard Mitigation Plan (LHMP), which is intended to reduce and/or eliminate risk in the City of Fontana. The LHMP process encourages communities to develop goals and projects that will reduce risk and build a more disaster resilient community by analyzing potential hazards. Section 4.7 of the LHMP speaks to climate change and the City's actions to address, including, for example, establishment of a "Sustainable Fontana" program to coordinate City government resource-efficiency efforts and promote private initiatives and opportunities. The City collaborates with the San Bernardino County Transportation Authority (SBCTA), infrastructure agencies, and other regional agencies to continue compliance in reaching and exceeding current and future state goals for greenhouse gas reductions and energy efficient regulations.

5.6.2 Thresholds of Significance

For the purposes of this analysis, implementation of the General Plan Update could result in potentially significant impacts related to greenhouse gas emissions and global climate change if it would:

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

Implementation of the General Plan Update would influence future development that will generate greenhouse gases and will contribute to climate change. Future development projects will be required to determine if individually they exceed recognized or adopted thresholds that comply with adopted greenhouse gas reduction plans.

The latest threshold developed by SCAQMD for greenhouse gas emissions is 10,000 metric tons carbon dioxide equivalent (MTCO2E) per year for industrial projects, 3,500 MTCO2E for residential projects, 1,400 MTCO2E for commercial projects, and 3,000 MTCO2E for mixed-use projects (SCAQMD 2008; SCAQMD 2010). These thresholds are based on a case study of 711 CEQA projects. These thresholds will be utilized for implementing development in the future in determining if emissions of greenhouse gases will be significant, until an officially adopted threshold is established by SCAQMD.

5.6.3 Environmental Impacts

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

Development that occurs because of implementation of the proposed General Plan Update would include activities that emit greenhouse gas emissions over the short and long term. A summary of short- and long-term emissions and the analysis for each are included below.

As noted in the General Plan Update, the major projected impact of climate change in Fontana is expected to be more days of extreme heat over longer periods. For example, by 2070, Riverside is expected to double the annual number of days over 95 degrees (from 43 to 82 days, or almost a quarter of the days in a year). The major sources of GHGs in Fontana are on-road transportation (39%) and buildings (51%) according to a 2008 SANBAG inventory. Short-term and long-term emissions typically associated with construction and operations of future development projects, which may occur because of implementation of the General Plan Update, are further described below.

Short-Term Emissions

Short-term greenhouse gas emissions would occur because of construction equipment used for the following: demolition, grading, paving, and building construction activities. GHG emissions would also result from worker and vendor trips to and from project sites and from demolition and soil hauling trips. Construction activities are short-term and cease to emit greenhouse gases upon completion, unlike operational emissions that are continuous year after year until operation of the use ceases. As such, SCAQMD recommends in its draft threshold to amortize construction emissions over a 30-year operational lifetime. This normalizes construction emissions so that they can be grouped with operational emissions to generate a precise project GHG inventory.

Typically, construction-related GHG emissions contribute unsubstantially (less than one percent) to a project's annual greenhouse gas emissions inventory and mitigation for construction-related

emissions is not effective in reducing a project's overall contribution to climate change, given how small of a piece of the total emissions construction emissions are. Short-term climate change impacts due to future construction-related activities would be subject to State requirements for GHG emissions and would be assessed on project-by-project basis. Refer to Section 5.4.6 for a list of example mitigation measures.

Furthermore, the proposed General Plan Update policies related to Community Mobility and Circulation and Sustainability and Resilience (listed below) indicate the City of Fontana's commitment to reduce greenhouse gas emissions are consistent with State goals. Implementation of AB 32 and SB 375 through ARB's Scoping Plan and SCAG's 2016 RTP/SCS are also designed to achieve the required reduction in greenhouse gas emissions. Analysis of the General Plan's support of these plans is presented below.

Long-Term Emissions

Future development projects will result in continuous GHG emissions from mobile, area, and operational sources. Mobile sources, including vehicle trips to and from development projects, will result primarily in emissions of CO_2, with minor emissions of CH_4 and N_2O. The most significant GHG emission from natural gas usage will be methane. Electricity usage by future development and indirect usage of electricity for water and wastewater conveyance will result primarily in emissions of carbon dioxide. Disposal of solid waste will result in emissions of methane from the decomposition of waste at landfills coupled with CO_2 emission from the handling and transport of solid waste. These sources combine to define the long-term greenhouse gas inventory for typical development projects.

As discussed in Section 5.2 (Air Quality), according to the RTP/SCS, by 2040, the City of Fontana is projected to have a population of 280,900 (SCAG, 2016). With implementation of the General Plan Update, the City of Fontana planning area is estimated to grow to a total population of 315,852 (Stantec 2017). This is an approximately 12% increase compared to the population forecast assumed in the RTP/SCS and has the potential to be inconsistent with the RTP/SCS. However, the land use modifications and policies proposed as part of the General Plan Update would result in an approximately 19% reduction in per capita vehicle miles traveled compared to 2040 buildout of the existing General Plan. Despite the projected population growth (including employment) associated with the General Plan Update, daily total vehicle miles traveled within the planning area would be reduced from 12,880,405 to 11,679,397, or an approximately 9% reduction (Table 5.6-2).

According to the CARB's 2017 Climate Change Scoping Plan, the transportation sector remains the largest source of GHG emissions in the State, accounting for 37% of the inventory (CARB 2017). A typical passenger vehicle emits approximately 4.6 metric tons of CO_2 per year (EPA 2018). This number can vary based on a vehicle's fuel, fuel economy, and the number of miles driven per year. The 9% reduction in daily total vehicle miles traveled under buildout for the General Plan Update would have a substantial reduction in overall greenhouse gas emissions. Therefore, impacts would be considered less than significant.

Table 5.6-2 General Plan Buildout 2040 Conditions Summary

Projected Component	Regional Transportation Plan/ Sustainable Communities Strategy	Current General Plan	Proposed General Plan (with Applied Goals & Policies)
Population	280,900	281,339	315,852
Employment	70,800	90,054	99,129
Daily Total Trips	n/a	935,523	n/a
Daily Total VMT	n/a	12,880,405	11,679,397
Daily VMT per Capita[1]	n/a	34.7	28.1
NOTES: [1] Per Capita estimate based on Service Population (Residential Population plus Employment Population) [2] VMT = vehicle miles traveled.			
SOURCE: Stantec Consulting Traffic Impact Study (2017)			

To further evaluate potential long-term increases in GHG emissions because of the proposed land use modifications associated with the General Plan Update, land use-specific emissions factors were estimated using the California Emissions Estimator Model 2016.3.1 (CalEEMod) and applied to the land use acreages in the existing General Plan and proposed General Plan Update. The total land use acreages of the existing General Plan and proposed General Plan Update are shown in Table 5.6-3 and the estimated land use-specific GHG emissions factors are summarized in Table 5.6-4. The land-use specific and difference in long-term GHG emissions from implementation of the proposed General Plan Update (including those from the projected 9% reduction in vehicle miles traveled because of implementing the proposed General Plan Update goals and policies) compared to the existing General Plan are shown in Table 5.6-6. CalEEMod output files are included in Appendix C.

Table 5.6-3 Land Use Comparison Between 2003 General Plan and Proposed General Plan Update

Land Use	2003 General Plan (acres)	Proposed General Plan Update (acres)	Difference (acres)
Residential	15,723	15,474	-249
Commercial	2,425	1,170	-1,255
Industrial	8,149	8,526	377
Public	3,710	3,328	-382
Open Space	0	30	30
Mixed Use	1,075	2,564	1,489

Table 5.6-4 Estimated Land Use-Specific Greenhouse Gas Emissions Factors

Land Use	Area & Energy Operation Phase Greenhouse Gas Emissions - (Metric Tons/Year/Acre)				Mobile Operation Phase Greenhouse Gas Emissions – (Metric Tons/Year/Acre)			
	CO_2	CH_4	N_2O	CO_2e	CO_2	CH_4	N_2O	CO_2e
Residential	59.04	0.13	0.00	62.82	162.98	0.01	0.00	163.20
Commercial	204.89	0.74	0.01	225.57	591.81	0.03	0.00	592.62
Industrial	271.61	0.97	0.01	299.08	467.49	0.02	0.00	468.08
Public	565.15	2.49	0.01	631.02	2,311.29	0.16	0.00	2,315.31
Open Space	4.24	0.00	0.00	4.28	9.83	0.00	0.00	9.85
Mixed Use	129.78	0.46	0.00	142.37	1276.18	0.08	0.00	1278.27

SOURCE: California Emissions Estimator Model, See Appendix C

NOTES:

- "Residential" includes a combination of Single Family Residence, Condos/ Townhomes, and Low-Rise Apartment subtypes
- "Commercial" includes office park
- "Industrial" includes both General Heavy Industrial and General Light Industrial land uses.
- "Public" includes Government Office Building, Parking Lot, and Restaurants
- "Open Space" includes a combination of Education, Commercial, and Recreation land uses.
- "Mixed Use" includes a combination of Residential (Townhomes/ Condos subtype), Commercial (General Office Building subtype), and Retail (Strip Mall subtype)

Table 5.6-5 Difference in Long-Term Greenhouse Gas Emissions from Proposed General Plan Update Compared to 2003 General Plan

Land Use	Difference in Area & Energy Operation Phase Emissions (Metric Tons/Year) with 9% Reduction in Vehicle Miles Travelled				Difference in Mobile Operation Phase Emissions (Metric Tons/Year) with 9% Reduction in Vehicle Miles Travelled			
	CO_2	CH_4	N_2O	CO_2e	CO_2	CH_4	N_2O	CO_2e
Residential	-14,699.74	-33.30	-0.37	-15,643.23	-40,582.09	-2.19	0.00	-40,636.92
Commercial	-257,138.71	-924.41	-9.54	-283,095.62	-742,725.19	-40.29	0.00	-743,732.20
Industrial	102,397.99	366.70	3.99	112,754.19	176,242.60	8.86	0.00	176,464.28
Public	-215,886.57	-950.95	-4.66	-241,048.49	-882,913.89	-61.43	0.00	-884,449.83
Open Space	127.08	0.04	0.00	128.34	294.95	0.02	0.00	295.37
Mixed Use	193,240.04	689.20	5.11	211,995.03	1,900,226.66	124.63	0.00	1,903,341.35
NET DIFFERENCE	-191,959.91	-852.73	-5.47	-214,909.77	410,543.04	29.60	0.00	411,282.04
NET DIFFERENCE WITH 9% VMT Reduction	-191,959.91	-852.73	-5.47	-214,909.77	-1,597,862.11	-98.50	0.00	-1,600,325.00

NOTE:
A negative value indicates the Proposed General Plan Update would have lesser emissions than those projected in the 2003 General Plan.
A positive value indicates the Proposed General Plan Update would have greater emissions than those projected in the 2003 General Plan.
9% reduction in vehicle miles traveled subtracted from 2003 General Plan buildout projections for mobile source emissions.
VMT = vehicle miles traveled.

Table 5.6-6 Total Difference in Long-Term Greenhouse Gas Emissions from Proposed General Plan Update Compared to 2003 General Plan

Plan Component	Total Difference in Greenhouse Gas Emissions 2003 General Plan vs Proposed General Plan (MTCO2E)			
	CO_2	CH_4	N_2O	CO_2e
Proposed General Plan Update	218,583.13	-823.13	-5.47	196,372.27
Proposed General Plan Update with 9% Reduction in VMT	-1,789,822.01	-951.22	-5.47	-1,815,234.77

As shown in Table 5.6-6 above, implementation of the proposed General Plan Update including the 9% reduction in vehicle miles traveled achieved by the goals and policies of the General Plan Update, would result in a substantial net reduction in greenhouse gas emissions compared to the existing General Plan. Potential impacts would therefore be less than significant.

The following policies in the General Plan Update support actions that reduce GHG emissions and help to quantify emissions reductions (refer to Table 5.6-6). The Community Mobility and Circulation Element of the General Plan Update supports options for transit and active transportation (pedestrian and bicycle mobility) for Fontana. These concepts are consistent with the SCAG 2016 RTP/SCS concepts of Neighborhood Mobility Areas and Livable Corridors and are applied in the General Plan Update as "Connected Neighborhoods." The Sustainability and Resilience Element of the General Plan Update supports the concept of environmental sustainability. Environmental sustainability is defined as the ability of the environment to continue to properly function indefinitely. The element establishes goals and policies in the categories of energy, waste reduction, urban design, urban nature, transportation, environmental health, water and energy efficient city buildings and facilities.

Table 5.6-7 General Plan Update Applicable Goals and Policies

Goals & Policies	Action
Community Mobility and Circulation	
Goal 7: The city of Fontana participates in shaping regional transportation policies to reduce traffic congestion and greenhouse gas emissions.	
• Lead and participate in initiatives to manage regional traffic. • Coordinate with regional agencies and Caltrans to participate in regional efforts to maintain transportation infrastructure in Fontana. • Participate in the efforts of the Southern California Association of Governments (SCAG) to coordinate transportation planning and services that support greenhouse gas reductions. • Participate in the efforts by Caltrans to reduce congestion and improve traffic flow on area freeways.	A. Use the City's annual Legislative Platform to define positions on regional and statewide transportation polices. B. Work with Metrolink and other regional transit providers to support efforts to expand the regional rail system to connect a greater number of Fontana residents and businesses with other cities and counties in Southern California. C. Support the adoption and use of technologies that reduce emissions from passenger and transit vehicles. D. Reduce greenhouse gas emissions associated with transportation by reducing vehicle miles traveled and per-mile emissions through use of vehicle technologies to meet the City's goals for greenhouse gas reductions by 2035. E. Complete a comprehensive Circulation Master Plan to include cross-sections consistent with the General Plan and the Active Transportation Plan.
Sustainability and Resilience	
Goal 4: Fontana meets the greenhouse gas reduction goals for 2030 and subsequent goals set by the state.	
• Continue to collaborate with SBCTA, infrastructure agencies, and utilities on greenhouse gas reduction studies and goals.	A. Build on baseline research completed for greenhouse gas reduction to set local goals and meet state goals. B. Work with regional agencies to meet any future state goals for GHG reductions.
Goal 5: Green building techniques are used in new development and retrofits.	
• Promote green building through guidelines, awards and nonfinancial incentives.	A. Establish a residential "cool roofs" program to reduce air conditioning costs and the urban heat island effect. B. Encourage retrofits of whole house fans for existing buildings. C. Establish an annual award for green development projects, including retrofits, in Fontana
Goal 6: Fontana is a leader energy-efficient development and retrofits.	
• Promote energy-efficient development in Fontana. • Meet or exceed state goals for energy-efficient new construction.	A. Provide incentives for energy-efficient residential and non-residential construction.

Table 5.6-7 General Plan Update Applicable Goals and Policies

Goals & Policies	Action
Goal 7: Conservation of water resources with best practices such as drought-tolerant plant species, recycled water, greywater systems, has become a way of life in Fontana.	
• Continue to promote and implement best practices to conserve water.	A. Develop drought-tolerant (xeriscaping) designs and maintenance programs for public spaces rather than eliminating plants because of drought. B. Identify systems and methods to provide sufficient water to establish new plants as they become more drought-tolerant, such as the use of recycled water. C. Continue to promote drought-tolerant landscaping and water conservation activities for homeowners, tenants, and other property owners. D. Promote Fontana Water Company initiatives including water surveys and landscape audits; water conservation kits; workshops in drought tolerant landscaping; rebates on washers, toilets, irrigation controllers, rain barrels and other water conservation assistance. E. Connect water conservation and drought-tolerant landscaping with use of recycled laundry water through local plant nurseries and gardening groups.

B. Conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing the emissions of greenhouse gases.

California Air Resources Board Scoping Plan (AB32)

CARB's 2017 Scoping Plan identifies strategies to reduce California's greenhouse gas emissions in support of AB32. Many of the strategies identified in the Scoping Plan are not applicable at the General Plan or project-level, such as long-term technological improvements to reduce emissions from vehicles. Some measures are applicable and supported by the project. Finally, while some measures are not directly applicable, the project would not conflict with their implementation. Reduction measures are grouped into 18 action categories, as follows:

1. **California Cap-and-Trade Program Linked to Western Climate Initiative Partner Jurisdictions.** Implement a broad-based California cap-and-trade program to provide a firm limit on emissions. Link the California cap–and-trade program with other Western Climate Initiative Partner programs to create a regional market system to achieve greater environmental and economic benefits for California (CARB 2015). Ensure California's program meets all applicable AB 32 requirements for market-based mechanisms. These programs involve capping emissions from electricity generation, industrial facilities, and broad scoped fuels. Should a qualifying heavy industrial facility be located in the City, it would be subject to State requirements.

2. **California Light-Duty Vehicle Greenhouse Gas Standards.** Implement adopted Pavley standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals. This is not applicable as this is a statewide measure establishing vehicle emissions standards.
3. **Energy Efficiency.** Maximize energy efficiency building and appliance standards, and pursue additional efficiency efforts including new technologies, and new policy and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California (including both investor-owned and publicly owned utilities). The General Plan Update's Sustainability and Resilience Element establishes goals and policies in the categories of energy, waste reduction, urban design, and energy efficiency. Through implementation of the General Plan Update, the City would also adhere to existing building and other codes regulating minimum energy, water, and waste efficiency. This is consistent with 2011 CALGREEN requirements and would thus not interfere with this program.
4. **Renewable Portfolio Standards.** Achieve 33 percent renewable energy mix statewide by 2020. This establishes the minimum statewide renewable energy mix and is not applicable at a City level or below for implementation. The proposed General Plan Update would not interfere with the implementation of this program.
5. **Low Carbon Fuel Standard.** Develop and adopt the Low Carbon Fuel Standard. This is not applicable to a City as this establishes reduced carbon intensity of transportation fuels.
6. **Regional Transportation-Related Greenhouse Gas Targets.** Develop regional greenhouse gas emissions reduction targets for passenger vehicles. The proposed General Plan Updates would potentially conflict with the implementation of SCAG's RTP/SCS to achieve the required GHG reduction goals by 2020 and 2035 based on an inconsistency with growth projections. However, transportation modelling of the land use plan performed for the General Plan Update shows a decline in vehicle miles traveled by encouraging mixed-use, and alternative modes of transportation. This would result in a substantial reduction in overall greenhouse gas emissions.
7. **Vehicle Efficiency Measures.** Implement light-duty vehicle efficiency measures. This is not applicable to a City as this identifies measures such as minimum tire-fuel efficiency, lower friction oil, and reduction in air conditioning use.
8. **Goods Movement.** Implement adopted regulations for the use of shore power for ships at berth. Improve efficiency in goods movement activities. Identifies measures to improve goods movement efficiencies such as advanced combustion strategies, friction reduction, waste heat recovery, and electrification of accessories. While the General Plan Updates may result in facilities such as distribution warehouses that are associated with goods movement, these measures are yet to be implemented and will be voluntary. The proposed General Plan Updates would not interfere with their eventual implementation.

9. **Million Solar Roofs Program.** Install 3,000 megawatts of solar-electric capacity under California's existing solar programs. Sets goal for use of solar systems throughout the state. The General Plan Update would not interfere with but instead would directly support installation of alternative energy sources through its policies and programs, such as those outlined in the Sustainability and Resilience Element (Table 5.6-6).
10. **Medium- and Heavy-Duty Vehicles.** Adopt medium-duty (MD) and heavy-duty (HD) vehicle efficiencies. Aerodynamic efficiency measures for HD trucks pulling trailers 53-feet or longer that include improvements in trailer aerodynamics and use of rolling resistance tires were adopted in 2008 and went into effect in 2010. Future, yet to be determined improvements, includes hybridization of MD and HD trucks. The General Plan Updates may result in development of industrial uses that utilize truck fleets. These potential future developments would be required to have their fleet equipment be consistent with the current applicable efficiency measures at the time of operation. The General Plan Updates would not interfere with implementation of this program.
11. **Industrial Emissions.** Require assessment of large industrial sources to determine whether individual sources within a facility can cost-effectively reduce greenhouse gas emissions and provide other pollution reduction co-benefits. Reduce greenhouse gas emissions from fugitive emissions from oil and gas extraction and gas transmission. Adopt and implement regulations to control fugitive methane emissions and reduce flaring at refineries. These measures are applicable to large industrial facilities (>500,000 MTCO2E/YR) and other intensive uses such as refineries. While it is unlikely that a qualifying heavy industrial facility such as these would be in the City, if one were, it would be subject to these state requirements; the General Plan Updates would not interfere with their implementation.
12. **High Speed Rail.** Support implementation of a high-speed rail system. This is not applicable as no high-speed rail facilities are planned within Fontana.
13. **Green Building Strategy.** Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings. As detailed above, the General Plan Update promotes energy efficient building design as well as implementation of existing building and other codes regulating minimum energy, water, and waste efficiency consistent with 2011 CALGREEN requirements and would thus be consistent and not interfere with this program (refer to Table 5.6-6)
14. **High Global Warming Potential Gases.** Adopt measures to reduce high global warming potential gases. The General Plan Update would not directly result in generation of high global warming potential gases and would not interfere with implementation of any future changes in air conditioning, fire protection suppressant, and other emission requirements.
15. **Recycling and Waste.** Reduce methane emissions at landfills. Increase waste diversion, composting and other beneficial uses of organic materials, and mandate commercial recycling to move toward zero waste. The General Plan Update is consistent since implementing development will be required to recycle a minimum of 50 percent from construction activities and warehouse operations per state requirements (State of California, 1989).

16. **Sustainable Forests.** Preserve forest sequestration and encourage the use of forest biomass for sustainable energy generation. The 2020 target for carbon sequestration is 5 million MTCO2E/YR. This is not applicable, as the City does not contain any areas defined as forest.
17. **Water.** Continue efficiency programs and use cleaner energy sources to move and treat water. The General Plan Updates are consistent since policies support water management best practices and water conservation policies. As well, the City of Fontana implemented a Watershed Water Quality Management Plan Handbook in 2016 that provides guidance for project proponents on the regulatory requirements applicable to a private or public development activity, including public works transportation projects, from project conception to completion.
18. **Agriculture.** In the near-term, encourage investment in manure digesters and at the five-year Scoping Plan update determine if the program should be made mandatory by 2020. The General Plan Update does not contain any agricultural land use designations, and any policies related to agriculture land uses would not be applicable.

The General Plan Update will not conflict with the implementation of regional transportation-related GHG targets outlined in SCAG's RTP/SCS because the land use modifications and reduction in vehicle miles traveled result in lower emissions than those forecasted in the RTP/SCS, nor would it conflict with any of the other provisions of the Scoping Plan or applicable regulation related to GHG reductions. Fontana's General Plan Update supports the Plan through energy efficiency, green building, recycling/waste, and water conservation through these proposed goals, objectives, and policies, in addition to those listed in Section 5.2 (Air Quality). Potential impacts would be less than significant.

Furthermore, as previously stated, parts of the City of Fontana have been identified as disadvantaged communities. These disadvantaged communities are anticipated to receive funding for air quality improvements from funds collected by the State for the cap-and-trade program (AB 32). This would further reduce air pollution and GHGs in the City, coupled with the GHG reductions associated with the General Plan Update.

5.6.4 Mitigation Measures

While no significant GHG impacts have been identified that require mitigation to less than significant levels, the following mitigation measures are considered as best practices to be applied to future projects, as necessary, to reduce impacts to less than significant levels. The following list of mitigation measures is not all inclusive of mitigation measures that may be adopted for future projects but serve as a guide and performance standards that constitute the minimum level of measures to reduce environmental impacts to acceptable levels.

MM-GHG-1 Prior to the issuance of building permits, future development projects shall demonstrate the incorporation of project design features that achieve a minimum of 28.5 percent reduction in GHG emissions from non-mobile sources as compared to business as usual conditions. With regard to expansions/modifications of existing facilities, this mitigation measure shall be applied to the resulting incremental net increase in enclosed floor area. Future projects

shall include, but not be limited to, the following list of potential design features (which include measures for reducing GHG emissions related to Transportation and Motor Vehicles).

Energy Efficiency

- Design buildings to be energy efficient and exceed Title 24 requirements by at least 5 percent.
- Install efficient lighting and lighting control systems. Site and design building to take advantage of daylight.
- Use trees, landscaping and sun screens on west and south exterior building walls to reduce energy use. Install light colored "cool" roofs and cool pavements.
- Provide information on energy management services for large energy users.
- Install energy efficient heating and cooling systems, appliances and equipment, and control systems (e.g., minimum of Energy Star rated equipment).
- Implement design features to increase the efficiency of the building envelope (i.e., the barrier between conditioned and unconditioned spaces).
- Install light emitting diodes (LEDs) for traffic, street and other outdoor lighting.
- Limit the hours of operation of outdoor lighting.

Renewable Energy

- Install solar panels on carports and over parking areas. Ensure all industrial buildings are designed to have "solar ready" roofs.
- Use combined heat and power in appropriate applications.

Water Conservation and Efficiency

- Create water-efficient landscapes with a preference for a xeriscape landscape palette.
- Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls.
- Design buildings to be water-efficient. Install water-efficient fixtures and appliances (e.g., EPA WaterSense labeled products).
- Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff.
- Restrict the use of water for cleaning outdoor surfaces and vehicles.
- Implement low-impact development practices that maintain the existing hydrologic character of the site to manage storm water and protect the environment. (Retaining storm water runoff on-site can drastically reduce the need for energy-intensive imported water at the site).
- Devise a comprehensive water conservation strategy appropriate for the project and location. The strategy may include many of the specific items listed above, plus other innovative measures that are appropriate to the specific project.
- Provide education about water conservation and available programs and incentives.

Solid Waste Measures

- Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard).
- Provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas.
- Provide education and publicity about reducing waste and available recycling services.

Transportation and Motor Vehicles

- Limit idling time for commercial vehicles, including delivery and construction vehicles.
- Promote ride sharing programs (e.g., by designating certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading and waiting areas for ride sharing vehicles, and providing a web site or message board for coordinating rides).
- Create local "light vehicle" networks, such as neighborhood electric vehicle (NEV) systems.
- Provide the necessary facilities and infrastructure to encourage the use of low or zero-emission vehicles (e.g., electric vehicle charging facilities and conveniently located alternative fueling stations).
- Promote "least polluting" ways to connect people and goods to their destinations.
- Incorporate bicycle lanes and routes into street systems, new subdivisions, and large developments.
- Incorporate bicycle-friendly intersections into street design.
- For commercial projects, provide adequate bicycle parking near building entrances to promote cyclist safety, security, and convenience. For large employers, provide facilities that encourage bicycle commuting (e.g., locked bicycle storage or covered or indoor bicycle parking).
- Create bicycle lanes and walking paths directed to the location of schools, parks, and other destination points.

5.6.5 References

California Air Resources Board. Air Quality Monitoring Network. Accessed on March 18, 2018: https://www.arb.ca.gov/aaqm/aaqm.htm.

City of Fontana Code of Ordinances. Online content updated on October 25, 2017 (Supplement 42). Accessed on February 26, 2018: https://library.municode.com/ca/fontana.

Draft Fontana Forward General Plan Update 2015-2035. City of Fontana, California. October 9, 2017.

United States Environmental Protection Agency. Green Vehicle Guide. Accessed April 25, 2018: https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle

Fontana General Plan Update Background Report, 2016. Prepared by Stantec Consulting Services, Inc. for the City of Fontana, California. April.

Fontana General Plan Update Traffic Analysis Report, 2018. Prepared by Stantec Consulting Services, Inc. for the City of Fontana, California. March.

Office of Environmental Health Hazard Assessment. SB 535 Disadvantaged Communities, 2017. Accessed on March 18, 2018: https://oehha.ca.gov/calenviroscreen/sb535

South Coast Air Quality Management District (SCAQMD 2008). Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans, December 5, 2008 Board Meeting Agenda Item #31 Staff Report.

South Coast Air Quality Management District. (SCAQMD 2010). CEQA Significance Thresholds Working Group. Meeting # 15, Main Presentation. September 28, 2010.

State of California. 1989. Integrated Waste Management Act (AB 939, Sher, Chapter 1095, Statutes of 1989 as amended [IWMA])

State of California. 2012. California Adaptation Planning Guide: Planning for Adaptive Communities.

United States Environmental Protection Agency. Clean Air Act. Accessed on March 18, 2018: https://www.epa.gov/air/caa/.

5.7 HAZARDS AND HAZARDOUS MATERIALS

This chapter addresses hazards and hazardous materials in the Project area, provides an overview of public safety issues specific to the City of Fontana, and evaluates the potential effects to human health and the environment with respect to implementation of the General Plan Update.

5.7.1 Environmental Setting

5.7.1.1 Natural and Manmade Hazards

Background

The Federal Emergency Management Agency (FEMA) is responsible for coordinating the implementation of the Disaster Mitigation Act of 2000, which requires local governments, as well as the state and special districts, to develop hazard mitigation plans. On March 1, 2005, the Fontana City Council approved Resolution 2005-13, which adopted the City's Local Hazard Mitigation Plan (LHMP). The LHMP was prepared pursuant to the requirements of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended by Section 322 of the Disaster Mitigation Act of 2000 and the 44 Code of Federal Regulations Part 201 – Mitigation Planning. The LHMP, which was adopted by the Fontana City Council on May 8, 2012 and approved by FEMA in October 2012, was updated in June 2017 in accordance with the five-year update cycle. The LHMP is on file with the City of Fontana (LHMP 2017; Appendix F).

The goals of the LHMP are to protect life, property, and the environment; improve public awareness; protect the continuity of government; and improve emergency management preparedness, collaboration and outreach. The LHMP contains a profile of the City, a detailed assessment of disasters that could occur in Fontana, and the mitigation goals of the City to reduce long-term vulnerabilities. Along with the City's mitigation goals, the LHMP contains mitigation strategies (Chapter 6 of the LHMP) that are derived from an in-depth review of the existing vulnerabilities and capabilities outlined in the LHMP, combined with a vision for creating a disaster resistant and sustainable community for the future. This vision is based on informed assumptions, recognizes both mitigation challenges and opportunities, and is demonstrated by the goals, objectives, and projects listed within the plan.

The mitigation measures identified under each objective were prioritized by the Local Advisory Task Force, which is the primary mechanism for ensuring coordination with other agencies and organizations that could support mitigation plan development and implementation. The mitigation measures include specific measurable descriptors on how to accomplish the objectives. The goals, objectives, and actions form the basis for a Mitigation Action Strategy and specific mitigation projects to be considered for implementation (LHMP 2017: Appendix F).

Vulnerability Assessment

In accordance with FEMA requirements, the 2017 LHMP Local Advisory Task Force identified and prioritized the natural and manmade hazards affecting Fontana and assessed the vulnerability from them. Hazards were ranked as high, medium or low based upon the perceived threat to the City. In its hazard identification process, the Local Advisory Task Force identified earthquakes, wildfires, flood/winter storms, and wind surges as having the highest probability to occur with the greatest impact on the City. Climate change/drought and landslides were ranked as having a medium and low risk, respectively.

A designation of high was assigned to hazards when a significant threat was identified. A hazard in the medium category has some likelihood of occurrence, but does not pose a significant threat to the community. A threat category of low designates hazards unlikely to occur. Even though a particular hazard may not have occurred in recent history in the City, all hazards that could potentially affect Fontana were considered by the Local Advisory Task Force.

For the purposes of this analysis and the Thresholds of Significance required to be considered under the *California Environmental Quality Act* (CEQA) (see Section 5.7.2, below), only wildland fires (also known as wildfires) and their potential environmental impacts are evaluated in this chapter. Hazards associated with earthquakes and landslides are discussed in Chapter 5.5 of this environmental impact report (EIR); climate change/drought is discussed in Chapter 5.6; and flooding is discussed in Chapter 5.8.

Wildfires

A wildfire is an uncontrolled fire that spreads through vegetative fuels, posing danger and threatening life and property. Wildfires can occur in undeveloped areas and spread to urban areas, where development can be heavily concentrated. The City is surrounded by foothills that have steep terrain and light, flashy fuels, and the predominate weather patterns feature high temperatures, low humidity, as well as seasonal high speed Santa Ana winds. These factors together, with many homes that are built near or in the interface zone, have created a potential for significant damage due to wildfire. Historically, most of the wildfires in the City have occurred in northwest Fontana, with occasional fires in the Jurupa Hills. Northwest Fontana has high chaparral vegetation, steep slopes, and is subject to hot Santa Ana winds blowing down the Cajon Pass. The Jurupa Hills have high grasses and steep slopes. The City has established a Fire Hazard Overlay District in sections of North Fontana and open space areas in South Fontana to reduce risk from wildfire.

5.7.1.2 Hazardous Materials Sites

Government Code section 65962.5 (referred to as the Cortese List) requires the California Environmental Protection Agency (Cal-EPA) to develop at least annually an updated list of and information related to the locations of hazardous materials release sites. The California Department of Toxic Substances Control (DTSC) is responsible for a portion of the information included on the Cortese List. DTSC's EnviroStor database lists one site, Western States Refining located at 10763 Poplar Avenue. The site operated from 1979 to 1984 as a metal recovery facility. The record search for this site indicates that DTSC performs annual land use covenant restriction inspections to ensure that there is no drilling at the site. The status of this site is "certified operations and maintenance (O&M) with land use restrictions only."

The State Water Resources Control Board (SWRCB) also is responsible for contributing information to the Cortese list. There is one site currently listed on the SWRCB's GeoTracker, a data management system for sites that impact, or have the potential to impact, water quality in California. The site, the former Alumax Fontana Facility located at 10825 Beech Avenue, was an aluminum recovery facility. Potential contaminants of concern that were byproducts of the aluminum recovery process were sodium (salt) and inorganics (potassium chloride). Site investigations and assessments indicated that salt contamination at the site was non-hazardous. Installation of an asphalt closure cap was completed in 2008 to reduce water infiltration and mobilization of salt-affected soils beneath the site. The property was redeveloped into a warehouse for storage and distribution of dry goods. While the former site is considered closed, post-closure monitoring may occur at the discretion of the SWRCB.

A more comprehensive listing of Fontana sites with a history of hazardous waste spills or other incidents and the cleanup outcome are available and mapped in the Environmental Data Resources (EDR) Report for the Project Area, which is on file with the City of Fontana (EDR 2015).

5.7.1.3 Transport of Hazardous Materials

Roads, railroad, and pipelines located within the City of Fontana are used for the transport of hazardous materials. This includes three major freeways (I-10, I-15, and SR-210) and two railroad systems extending through the City.

5.7.1.4 Schools

The proximity of schools to waste facilities or sites known to be hazardous is an important factor in deciding the location for new development. CEQA Section 15186 requires the consideration of the location of schools relative to facilities that are reasonably anticipated to be sources of hazardous emissions or that could handle hazardous materials, wastes and substances.

5.7.1.5 Airports

The LA/Ontario International Airport is the closest airport to the City of Fontana, located approximately 10 miles from the City's downtown area. The City is directly under the landing path of planes arriving at and departing from the airport. City limits are located three miles east of the nearest point of the airport's runway, and the southern half of the City is located within the boundaries of the airport influence area of the LA/Ontario International Airport Land Use Compatibility Plan (herein, Airport Compatibility Plan). The airport influence area includes areas in which current or future airport-related safety, noise, airspace protection, or overflight factors may significantly affect land uses or necessitate restrictions on those uses (Airport Compatibility Plan 2011). Industrial and residential land uses in the western portion of the City are within the Federal Aviation Administration's (FAA) Community Noise Equivalent Level (CNEL) 65 decibel current and future noise contour boundaries of the Airport Compatibility Plan. The future noise forecast is based on the ultimate reconfiguration of the airport, such that runways closest to the City would shift east of current alignments.

5.7.1.6 Emergency Response

With seven fire stations located throughout Fontana, the Fontana Fire Protection District provides emergency, preventive and administrative services in the City and Sphere of Influence through a contract with the San Bernardino County Fire Department. The Office of Emergency Services (OES), a division of the San Bernardino County Fire Department, is responsible for countywide emergency planning, mitigation, response, and recovery activities. The OES works with all county departments and 24 cities, and many non-government organizations. In the event of an emergency, the OES manages the County's Emergency Operations Center (EOC) and coordinates with the county's disaster response expenses for recovery from state and federal governments. OES is run by an OES Manager who is responsible for the day-to-day administration of the county's disaster preparedness and response program and development of the County's Emergency Operations Plan. One of the primary functions of the OES is to ensure that the EOC is in a constant state of readiness (San Bernardino County Fire website).

5.7.2 Thresholds of Significance

Implementation of development under the General Plan Update may have a potentially significant impact if it were to result in any of the following:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials
- 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
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school

- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment
- Result in a safety hazard for people residing or working in the project area for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport
- Result in a safety hazard for people residing or working in the project area for a project within the vicinity of a private airstrip
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands

5.7.3 Environmental Impacts

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

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

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

Implementation of the General Plan Update will not directly result in any specific development project; individual projects would undergo environmental review as they are proposed. As such, while no specific project is addressed in this Program EIR, this discussion will instead focus on potential hazardous materials impacts associated with new land use policies and actions contained in the General Plan Update to guide future development in the City. Notwithstanding, it should be noted that no new development under the General Plan Update is proposed in locations that are currently identified on the Cortese List.

The General Plan Update would introduce new land uses to the City that may, in turn, result in new uses of hazardous materials and the potential generation of hazardous waste greater than current conditions. For example, actions in the Land Use, Zoning, and Urban Design Element of the General Plan Update include extending industrial land uses along I-10, as shown on the Future Land Use Map, and directing new industrial development to the Southwest Industrial Park to build out this area designated for industrial development (refer to Table 5.7-1, below). In addition, new residential and mixed-use developments are proposed under the General Plan Update, including in the City's downtown, thereby incrementally increasing the use and disposal of commercial and household hazardous materials.

Table 5.7-1 General Plan Update Goals, Policies, and Actions Applicable to Industrial Land Uses

Goals & Policies	Action
Land Use, Zoning, and Urban Design	
Goal 5: Fontana's industrial uses are concentrated in a few locations that have easy access to regional transportation routes.	
• Promote the Southwest Industrial Park and the I-10 corridor as preferred locations for industrial uses. • Maintain but do not expand existing heavy-industrial land use areas in proximity to one another and to services for industrial uses • Avoid locating small areas of residential uses where they will be surrounded by intensive commercial or industrial uses.	A. Extend industrial land uses along I-10 as shown in the Future Land Use Map (Chapter 15, page 15.23). B. Direct new industrial development to SWIP in order to build out this area designated for industrial development.

With new industrial and mixed-use development proposed under the General Plan Update, there is an increased potential for spills and accidents involving hazardous materials to occur where such materials are newly used, handled, transported, and disposed of, thereby causing possible injury or harm to humans and the environment. However, compliance with federal, state, county, and local regulations relating to the use, storage, handling, transport, and disposal of hazardous materials would reduce the potential risk of hazardous materials exposure to a less than significant level. Furthermore, household hazardous materials or wastes, such as paint, chemicals, oil, anti-freeze, pesticides, cleaners, etc., are required to be disposed of at the City's Household Hazardous Waste facility, in accordance with State and local regulations (LHMP 2017; Appendix F).

Implementation of the General Plan Update would not result in impacts associated with known and/or suspected hazardous materials. However, there is a potential that previously unknown hazardous material contamination from historical use of a property may be encountered during future development activities. Should such contamination be discovered, existing federal, state, and local regulations would require delineation of properties containing hazardous substances, and remediation of those properties to a level approved by the designated enforcement agency. As such, with compliance with existing regulations pertaining to hazardous materials contamination, impacts associated with hazardous materials would be less than significant.

In addition, the General Plan Update includes goals, policies, and actions that could further reduce risk of improper use, storage, and/or transport of hazardous materials. Applicable goals, policies, and actions include the following presented in Table 5.7-2, below:

Table 5.7-2 General Plan Update Goals, Policies, and Actions Applicable to Hazardous Materials Use, Storage, and/or Transport

Goals & Policies	Action
Infrastructure and Green Systems Element	
Goal 8: All residences, businesses, and institutions have a dependable, environmentally-safe means to dispose of solid waste.	
• Continue to use best practices for environmentally safe collection, transport and disposal of hazardous wastes. • Continue to maximize landfill capacity by supporting recycling innovations, such as organic waste recycling for compost.	A. Continue recycling and green programs. B. Continue to work with San Bernardino County to minimize impacts from the landfill. C. Explore *establishing a public or private disposal station for RVs and trailers.*
Noise and Safety Element	
Goal 8: The potential for hazardous contamination is reduced in the city of Fontana.	
• The City shall strive to reduce the potential for residents, workers, and visitors to Fontana being exposed to hazardous materials and wastes.	A. Continue to support the siting of one of San Bernardino County's two Hazardous Materials Response Teams in Fontana.
Goal 9: The City maintains regulations, plans, protocols and emergency training to reduce hazards and risks and to meet state and federal requirements for emergency assistance.	
• Keep hazard-mitigation and emergency services programs up to date. • Continue to provide hazard and risk mitigation and emergency training to public employees and the public at large.	A. Update the LHMP as required to meet FEMA requirements. B. Explore the opportunity to create Business Emergency Response Training in cooperation with the Fire Department.

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

The General Plan Update does not consider or analyze specific development projects; therefore, the type or quantity of hazardous materials that could be used at future construction sites or development currently is unknown. However, given the wide distribution of schools within the City, development under the General Plan Update may result in the new use or emission of hazardous or acutely hazardous materials within one-quarter mile of an existing or proposed school.

While hazardous materials and waste generated by future development could pose a health risk to nearby schools, all businesses that handle or transport hazardous materials on site would be required to comply with federal, state, and local regulations for hazardous wastes. Chapter 6.95 of the California Health and Safety Code requires businesses that handle more than a specified amount of hazardous materials on site to submit a Hazardous Materials Business Plan to firefighters, health officials, planners, public safety officers, health care providers, regulatory agencies, and other interested persons. The business plan must include an inventory of the

hazardous materials handled, facility floor plans showing where hazardous materials are stored, an emergency response plan, and provisions for employee safety and emergency response training. Also, as discussed above, Section 15186 requires the consideration of the location of schools relative to facilities that are reasonably anticipated to be sources of hazardous emissions or that could handle hazardous materials, wastes, and substances.

For potential new school sites, Section 17210 of the California Education Code defines the requirements of siting school facilities near or on known or suspected hazardous materials sites, or near facilities that emit hazardous air emissions or handle hazardous materials, substances, or waste.

Given the above, compliance with federal, state, and local regulations would minimize the risks associated with the exposure of school populations to hazardous materials. Therefore, future development under the General Plan Update would result in a less than significant impact relative to the emissions or handling of hazardous materials within one-quarter mile of school facilities.

Would the project result in a safety hazard for people residing or working in the project area for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport?

Would the project result in a safety hazard for people residing or working in the project area for a project within the vicinity of a private airstrip?

There are no private airstrips located within or in the vicinity of the City. Therefore, no impact would occur as a result of General Plan Update implementation with respect to people residing or working in the vicinity of a private airstrip.

As discussed in the Airport Compatibility Plan, California Government Code Section 65302.3 requires that General Plans be consistent with the airport compatibility plans, and this consistency requirement pertains only to future land use development. Additionally, General Plans can show that land uses are continuing, even though they would be nonconforming with the compatibility plan criteria. As such, these types of conflicts would not constitute an inconsistency between a General Plan and a compatibility plan.

Proposed development under the General Plan Update within the noise contours of the Airport Compatibility Plan would be substantially similar to existing development (i.e., industrial uses). Moreover, the noise consistency analysis of the Airport Compatibility Plan concluded: “There were no areas identified as having a residential land use designation within the noise impact zones. Therefore, there is no potential for displacement of future residential development… the land uses that fall within the noise impact zone are industrial land uses" (Airport Compatibility Plan 2011).

The Noise Impact Map for the Ontario Airport was updated in September 2015, and modified the noise contours that had been presented in the 2011 Airport Compatibility Plan. Projected 2020 conditions show the 65-decibel contour extending to the intersection of E. Santa Ana Street and S. Wineville Road, located in Ontario near the western edge of Fontana. However, Title 21 (State Noise Standards) establishes that a CNEL of 65 decibels is the standard for the acceptable level of aircraft noise for persons living in the vicinity of airports. With adherence to existing state and local regulations, impacts related to people residing or working within an airport land use plan would be less than significant.

In addition, the General Plan Update's Noise and Safety Element contains several goals, policies, and actions to minimize noise impacts to people and the environment in the vicinity of sources of noise (refer to Table 5.7-3, below):

Table 5.7-3 General Plan Update Goals, Policies, and Actions Applicable to Noise

Goals & Policies	Action
Noise and Safety Element	
Goal 1: The City of Fontana protects its sensitive land uses from excessive noise through diligent planning through 2035.	
• New sensitive land uses shall be prohibited in incompatible areas. • Noise-tolerant land uses shall be guided into areas irrevocably committed to land uses that are noise-producing, such as transportation corridors. • Where sensitive uses are to be placed along transportation routes, mitigation shall be provided to ensure compliance with state-mandated noise levels. • Noise spillover or encroachment from commercial, industrial and educational land uses shall be minimized into adjoining residential neighborhoods or noise-sensitive uses.	A. The following uses shall be considered noise-sensitive and discouraged in areas in excess of 65 dBA CNEL: Residential Uses; Hospitals; Rest Homes; Long-Term Care Facilities; and Mental Care Facilities. B. The following uses shall be considered noise-sensitive and discouraged in areas in excess of 65 Leq(12) (Equivalent Continuous Sound Level): Schools; Libraries; Places of Worship; and Passive Recreation Uses. C. The State of California Office of Planning and Research General Plan Guidelines shall be followed with respect to acoustical study requirements.

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

Implementation of the General Plan Update could generate an increase in the residential and employee population in the City as a result of the construction of new residential housing and commercial/retail growth. This new development could, in turn, result in an increase in traffic. These new potential sources of congestion on local roads and freeways could increase response times for medical or other emergencies, and could delay evacuation of the population in an emergency.

According to the City's LHMP, numerous alternative routes, secondary points of access, cul-de-sac turnarounds, and other features that improve traffic circulation are planned into new development and redevelopment during the City's internal review process, which includes the Fire Department (LHMP 2017; Appendix F). These ongoing mitigations are in place so that emergency vehicles may respond quickly. Additionally, installation of security gate override systems and traffic signal pre-emption devices at critical signalized intersections are ongoing mitigations for systems that could otherwise obstruct or impair emergency access (LHMP 2017; Appendix F).

The General Plan Update does not propose changes to circulation in the City or to physical orientation of the Project area that could interfere with the City's emergency response or evacuation procedures. In addition, the General Plan Update does not propose to change or eliminate existing emergency response facilities such as fire stations. Furthermore, goals, policies, and actions in the Community Mobility and Circulation Element do not involve modifications to roadways in any manner that would impede response to an emergency.

The General Plan Update goals, policies, and actions are consistent with the LHMP. Goal 9 of the Noise and Safety Element (presented earlier in this section) identifies policies and actions to update hazard mitigation and emergency services, and to update the LHMP to continue to meet FEMA requirements. In addition, the goals, policies, and actions identified in the Community Mobility and Circulation Element of the General Plan Update are proposed to minimize traffic to the extent possible (refer to Chapter 5.13 of this Program EIR), which potentially would reduce impacts relative to interference with emergency response and evacuation plans. The Community Mobility and Circulation Element also encourages an increase in pedestrian and bicycle (rather than vehicle) connections between and within neighborhoods – thereby potentially further reducing traffic congestion.

Given the above, compliance with the mitigation program contained in the City's LHMP, along with implementation of the policies and actions in the Noise and Safety Element and the Community Mobility and Circulation Element of the General Plan Update, would result in a less than significant impact to the City's emergency response plan or emergency evacuation plan.

Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

The Project area is urbanized and surrounded by other urbanized communities; however, this growth has occurred adjacent to or in the vicinity of areas prone to wildfire within the community. Historically, most of the wildfires in Fontana have occurred in northwest Fontana, with occasional fires in the Jurupa Hills. Northwest Fontana has high chaparral vegetation, steep slopes, and is subject to hot Santa Ana winds blowing down the Cajon Pass. The Jurupa Hills have high grasses and steep slopes.

According to the City's LHMP (2017; Appendix F), the factors contributing to a high, widespread wildfire risk in the City include: 1) narrow and often one-lane and/or dead-end roads complicating evacuation and emergency response; 2) nature and frequency of ignitions, and increasing population density leading to more ignitions; 3) slope of the foothills; and 4) residential development along the foothills.

Given the nature of the wildland/urban interface in the City, residential and other types of development anticipated under the General Plan Update would result in a greater number of people and structures that could be exposed to wildland fires.

Under the General Plan Update, the master planned communities developed through the specific plan process since the 1980s that are located in the northern and southern portions of the City are not anticipated to experience land use changes over the next 20 years. These are areas that are geographically closer to the foothills to the north and south that are more prone to wildland fires. However, there are areas within the northern portion of the City that may be developed for residential and mixed uses, including: approximately 269 acres of currently undeveloped land along the southern edge of I-15, between Duncan Canyon and the northern edge of the City; and approximately 101 acres in the Ventana Specific Plan near the Duncan Canyon interchange (General Plan Update 2017).

The State of California Department of Forestry and Fire Protection (CalFIRE) has created, and continues to revise, a map of all Fire Hazard Severity Zones (FHSZ) within the state, including those in the City. The "Very High FHSZ" can be used to enforce enhanced regulations from the State Fire Marshal published within the California Building Code that relates to ignition and ember resistive building construction within the City. In addition, a Fire Hazard Overlay District (included in the City's Zoning and Development Code) in the northern and southern portions of the City are subject to regulations to mitigate risk from wildfire. The overlay district provides requirements for fire resistive construction, fuel modification areas, development property line setbacks, and vegetation clearances from roadways and buildings.

According to the City's LHMP, "The Office of the Fire Marshal within the Fire Department is involved throughout the planning and construction process of all new development, reviewing and approving the design of fire protection systems, educating the community about fire safe practices, and conducting investigations of all fires, including wildland fires. Fire Prevention places conditions of approval on projects when necessary to incorporate fire safety mitigation measures for projects with special hazards, such as those in wildfire prone areas" (LHMP 2017; Appendix F).

The General Plan Update includes goals, policies, and actions to reduce risk of urban fires in the project area, as presented in Table 5.7-4, below:

Table 5.7-4 General Plan Update Goals, Policies, and Actions Applicable to Urban Fire Protection

Goals & Policies	Action
Public and Community Services Department Element	
Goal 2: Fontana's Fire Department meets or exceeds state and national benchmarks for protection and responsiveness.	
• Continue the City's successful partnership with the San Bernardino County Fire Department.	A. Ensure continuing fire protection as the city's population grows and natural fire events may increase in number or intensity due to changing climate. B. Monitor population growth and development to ensure continuing protection through sufficient stations, equipment, training, and resources. C. Continue to provide public education about risks from fire, hazardous materials, and other hazards.
Noise and Safety Element	
Goal 7: Threats to public and private property from urban and wildland fire hazards are reduced in Fontana.	
• The City shall continue to require residential, commercial, and industrial structures to implement fire hazard-reducing designs and features. • The City shall continue to ensure to the extent possible that fire services, such as fire equipment, infrastructure, and response times, are adequate for all sections of the city. • The City shall monitor development or redevelopment in areas where fire zones have been mapped through the city.	A. The City shall require all new development in areas with a high fire hazard to provide fire-retardant landscaping and project design to reduce their fire hazard, and the City shall take measures to reduce the risk of fire at the Wildland/Urban Interface. B. The City will continue to support the wildland fire expertise provided by the San Bernardino County Fire Department and the Fontana Fire Department.

Therefore, with compliance with existing state and local regulations, the City's Zoning and Development Code, and mitigation in the LHMP – supported by implementation of the General Plan Update policies and actions relative to development in fire-prone areas – impacts to the public and environment related to risk of hazards due to wildland fire would be less than significant.

5.7.4 Mitigation Measures

While no significant hazards or hazardous materials impacts have been identified that require mitigation to less than significant levels, the following mitigation measures are considered as best practices to be applied to future projects, as necessary, to reduce impacts to less than significant levels. The following list of mitigation measures is not all inclusive of mitigation measures that may be adopted for future projects but serve as a guide and performance standards that constitute the minimum level of measures to reduce environmental impacts to acceptable levels.

MM-HAZ-1 The City shall require that new proposed facilities involved in the production, use, storage, transport or disposal of hazardous materials be located a safe distance from land uses that may be adversely impacted by such activities. Conversely, new sensitive facilities, such as schools, child-care centers, and senior enters, shall not to be located near existing sites that use, store, or generate hazardous materials.

MM-HAZ-2 The City shall assure the continued response and capability of the San Bernardino County Fire Department/Fontana Fire Protection District to handle hazardous materials incidents in the City and along the sections of freeways that extend across the City.

MM-HAZ-3 The City shall require all businesses that handle hazardous materials above the reportable quantity to submit an inventory of the hazardous materials that they manage to the San Bernardino County Fire Department - Hazardous Materials Division in coordination with the Fontana Fire Protection District.

MM-HAZ-4 The City shall identify roadways along which hazardous materials are routinely transported. If essential facilities, such as schools, hospitals, child care centers or other facilities with special evacuation needs are located along these routes, identify emergency response plans that these facilities can implement in the event of an unauthorized release of hazardous materials in their area.

MM-HAZ-5 A Phase I Site Assessment shall be prepared in accordance with American Society of Testing and Materials Standards and Standards for Practice for All Appropriate Inquiries prior to issuance of a Grading Permit for future development. The Phase I Environmental Site Assessment shall investigate the potential for site contamination, and will identify Specific Recognized Environmental Conditions (i.e., asbestos containing materials, lead-based paints, polychlorinated biphenyls, etc.) that may require remedial activities prior to land acquisition or construction.

5.7.5 References

California Code of Regulations, Title 14, Division 6, Chapter 3, Article 12, Section 15186 (School Facilities).

California Code of Regulations, Title 21, Section 5000 et seq. (State Noise Standards).

California Education Code, Title 1, Division 1, Park 10.5, Section 17210.

California Environmental Protection Agency Cortese List Data Resources. Accessed February 28, 2018 at https://calepa.ca.gov/sitecleanup/corteselist/

California Health and Safety Code, Division 20. Miscellaneous Health and Safety Provisions [24000 - 26217], Chapter 6.95. Hazardous Materials Release Response Plans and Inventory [25500 - 25547.8].

City of Fontana Fire Protection District. Website accessed March 9, 2018: https://www.fontana.org/634/Fire-Protection-District

City of Fontana Local Hazard Mitigation Plan (LHMP), June 2017.

Environmental Data Resources (EDR), 2015. Fontana Forward, San Bernardino, CA. Inquiry Number: 444314.2s

LA/Ontario International Airport Land Use Compatibility Plan, 2011. City of Ontario Planning Department, Ontario, California. April 19.

Safety Element Technical Background Report, 2002. Appendix B to the 2003 City of Fontana General Plan. June.

San Bernardino County Fire, Office of Emergency Services. Website accessed March 9, 2018: http://www.sbcfire.org/oes/About.aspx

5.8 HYDROLOGY AND WATER QUALITY

This section of the environmental impact report (EIR) identifies and analyzes regional and local surface water and groundwater resources that could affect or be affected by the Goals, Policies, and Actions presented in the General Plan Update. Specific issues analyzed in this section include the following: stormwater runoff (quantity and quality), flooding, and groundwater recharge. Sources of information to describe existing conditions, and for the analysis, include a variety of regional planning documents. It should be noted that water supply, use, and quality is a highly regulated resource in the arid environment of Southern California. Therefore, an extensive Regulatory Framework discussion is presented as the context upon which the General Plan Update Goals, Policies, and Actions are evaluated.

5.8.1 Regional Hydrology

The Santa Ana River (SAR) is the largest river system in Southern California, originating in the San Bernardino and San Gabriel Mountains with a watershed encompassing 2,450 square miles in San Bernardino, Riverside, and Orange Counties. The upper and lower watersheds are divided at Prado Dam located just east of the Santa Ana Mountains. Below the dam, the river channel passes through the mountains into Orange County, and ultimately reaches the Pacific Ocean between the cities of Newport Beach and Huntington Beach. Most of the river's tributary streams are historically ephemeral, with flow occurring almost exclusively in the winter months in response to heavy precipitation. Major tributaries to the SAR include San Antonio Creek, Chino Creek, San Timoteo Creek, Temescal Creek, Cucamonga Creek, Bear Creek, and Lytle Creek (see Figure 5.8-1).

The City of Fontana is located within the lower Lytle Creek watershed, which forms the northwest portion of the Santa Ana River Watershed and drains the eastern portion of the San Gabriel Mountains. Daytime temperatures in the summer months frequently exceed 100 degrees in the lower watershed and are about 10-15 degrees cooler in the upper watershed. Winter temperatures can fall below freezing throughout the entire watershed. The lower watershed averages 15-20 inches of rain annually while the upper watershed averages 35 inches annually. The Lytle Creek watershed covers an area of approximately 186 square miles with a mean annual runoff of roughly 31,720 acre feet (af). Lytle Creek is a tributary of Warm Creek, which in turn is a tributary to the SAR, joining the mainstem of the river in the vicinity of Prado Dam.

The lower portion of Lytle Creek flows through four cities: in addition to the City of Fontana, the lower watershed includes the cities of Rialto, San Bernardino, and Colton, as well as a portion of the unincorporated area of San Bernardino County. Although the upper reaches of Lytle Creek are generally perennial, the lower section of Lytle Creek changes into an intermittent stream with a dry wash below Interstate 15. The alluvial fan extends roughly from the Glen Helen area in the north, and south to Rancho Cucamonga and Colton. A small portion at the lower edge of the wash is in a concrete channel.



SOURCE: the Santa Ana Water Project Authority http://sawpa.maps.arcgis.com/apps/MapJournal/index

Figure 5.8-1 Santa Ana River Watershed

5.8.2 Regulatory Framework

The following section provides information regarding important regulatory programs related to water resources currently in effect. This section does not list all regulations relevant to hydrology and water quality issues; however, it does outline major programs applicable to the planning area.

5.8.2.1 Federal

Flood Control

The US Army Corps of Engineers (USACE) is responsible for providing flood protection facilities to navigable waters of the United States. The USACE also administers permitting pursuant to Section 404 of the *Clean Water Act* (CWA) for activities conducted within waters of the United States. Responsibility for flood protection falls under the jurisdiction of the San Bernardino County Flood Control District (SBCFCD) and the Riverside County Flood Control District, as well as local jurisdictions.

Floodplain Development

The Federal Emergency Management Agency (FEMA) is responsible for determining flood elevations and floodplain boundaries based on USACE studies. The FEMA is also responsible for distributing the Flood Insurance Rate Maps (FIRMs), which are used in the National Flood Insurance Program (NFIP). These maps identify the locations of special flood hazard areas, including the 100-year floodplain. The current FIRM for Fontana was made effective on September 2, 2016.

Water Quality

Section 303 of the federal CWA requires states to adopt water quality standards for all surface water of the United States. Where multiple uses exist, water quality standards must protect the most sensitive use. Water quality criteria are typically numeric, although narrative criteria based upon bio-monitoring methods may be employed where numerical standards cannot be established or where needed to supplement the criteria.

The *Safe Drinking Water Act* (SDWA) and subsequent amendments authorize the Environmental Protection Agency (EPA) to set health-based standards (maximum contaminant levels or MCLs) for drinking water to protect public health against both naturally-occurring and man-made contaminants. The EPA administers the SDWA at the federal level and establishes MCLs for bacteriological, inorganic, organic, and radiological constituents (United States Code Title 42, and Code of Federal Regulations Title 40). California administers and enforces the drinking water program at the State level, and has adopted its own SDWA, which incorporates the federal SDWA requirements including some requirements specific only to California (California Health and Safety Code, Section 116350).

5.8.2.2 State/Region

Water Quality

The State Water Resources Control Board (SWRCB) was established through the California Porter-Cologne Water Quality Act of 1969 and is the primary state agency responsible for water quality management issues in California. Much of the responsibility for implementation of the SWRCB's policies is delegated to the nine Regional Water Quality Control Boards (RWQCBs). The City of Fontana is located in the Santa Ana Region (Region 8).

The SWRCB and the RWQCBs are responsible for ensuring implementation and compliance with the provisions of the federal CWA, including National Pollutant Discharge Elimination System (NPDES) programs, and California's Porter-Cologne Water Quality Control Act. Along with the SWRCB and RWQCBs, water quality protection is the responsibility of numerous water supply and wastewater management agencies, as well as city and county governments, and requires the coordinated efforts of these various entities.

Section 402 of the CWA established the NPDES to regulate discharges into waters of the US. The EPA authorized the SWRCB to issue NPDES permits in the State of California in 1974. The NPDES permit establishes discharge pollutant thresholds and operational conditions for industrial facilities and wastewater treatment plants. Nonpoint source NPDES permits are also required for municipalities and unincorporated communities of populations greater than 100,000 to control urban stormwater runoff. These municipal permits require the preparation of Stormwater Management Plans (SWMPs) that reflect the environmental concerns of the local community.

The Municipal Storm Water Program regulates storm water discharges from municipal separate storm sewer systems (MS4s) throughout California. U.S. EPA defines an MS4 as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) owned or operated by a State (40 CFR 122.26(b)(8)).

Pursuant to the Federal *Water Pollution Control Act* (CWA) section 402(p), storm water permits are required for discharges from an MS4 serving a population of 100,000 or more. The Municipal Storm Water Program manages the Phase I Permit Program (serving municipalities over 100,000 people), the Phase II Permit Program (for municipalities less than 100,000), and the Statewide Storm Water Permit for the State of California Department of Transportation. The SWRCB and RWQCBs (collectively, the Water Boards) implement and enforce the Municipal Storm Water Program.

The City of Fontana lies within the jurisdiction of the Santa Ana Regional Water Quality Control Board (SARWQCB). The SARWQCB implements the NPDES permitting program for the SAR watershed pursuant to Section 402 of the federal CWA. As such, the SARWQCB has the authority to implement water quality protection standards through the issuance of permits for discharges to waters at locations within its jurisdiction. Existing water quality issues have been identified in

the watershed planning process and are incorporated in the Water Quality Control Plan (WCQP) for the Santa Ana Basin Plan. The Basin Plan designates beneficial uses of the waters of the region and specifies water quality objectives intended to protect those uses. The Basin Plan also specifies an implementation plan describing actions that are necessary to achieve and maintain water quality standards and regulates waste discharges to minimize and control their effects. Dischargers must comply with the water quality standards contained in the Basin Plan.

Section 303(d) of the CWA requires the SWRCB to list impaired water bodies in the state and determine Total Maximum Daily Loads (TMDLs) for pollutants or other stressors impacting water quality. The SAR is listed as impaired for indicator bacteria by nonpoint sources. As noted above, the Basin Plan establishes water quality objectives and implementation programs to meet stated objectives to protect the beneficial uses of water in the SAR and the coastal waters of the Pacific Ocean. Pursuant to Section 303(d) of the CWA, the SARWQCB is responsible for assigning and enforcing TMDLs for impaired waterbodies. Two reaches of the SAR (reaches 3 and 4) were found to be impaired and are listed on the SWRCB's 2002 list of impaired water bodies compiled pursuant to Section 303(d) of the federal CWA. Both reaches are upstream of Prado Dam, and the impairments are primarily attributable to pathogens caused by dairies and other nonpoint sources. Several tributaries to the SAR are listed as impaired for pathogens and nutrients, and some for sediment or heavy metals. General and site-specific water quality standards and criteria are listed in the Basin Plan.

Construction Site Runoff Management

The SWRCB adopted a statewide general NPDES permit for stormwater discharges associated with construction activity (General Construction Permit) in August 1999. Performance standards for obtaining and complying with the General Construction Permit are described in General Permit for Discharges of Stormwater Associated with Construction Activity in the State, NPDES General Permit No. CAS000002; Waste Discharge Requirements (WDR), Order No. 99-08-DWQ. The General Construction Permit was modified in April 2001 (SWRCB Resolution No. 2001-046) to require permittees to implement specific sampling and analytical procedures to determine whether the best management practices (BMPs) used at the construction site are effective.

Under the General Construction Permit, projects that result in disturbance of one or more acres of soil, or whose projects disturb less than one acre, but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Construction Permit.

Urban Runoff Management

The SBCFCD, as well as the County and the 16 incorporated cities within the Santa Ana River Watershed, are Co-permittees under a stormwater discharge permit issued by the State of California through the SARWQCB. The County Flood Control District has been designated "Principal Permittee" under the MS4 Permit and administers and coordinates many of the permit requirements on behalf of all the Permittees. The Permittees are implementing and complying

with the requirements of the latest NPDES MS4 permit (4th iteration) that was issued in January 2010.

5.8.2.3 Local

San Bernardino County Flood Control District (SBCFCD)

The SBCFCD is a division of the San Bernardino County Department of Public Works with responsibility for maintaining the flood control facilities within the SAR channel and other streams in the County, including the levees and concrete linings, and works in conjunction with other flood control agencies in the watershed, including the Riverside County Flood Control District and the Orange County Flood Control District.

Santa Ana River Watermaster

The Santa Ana River Watermaster is a five-member committee appointed by the court to administer the provisions of the 1969 Stipulated Judgment. The Watermaster is made up of representatives from each of the parties subject to the Judgment and maintains a continuous accounting of storm and base flows, entitlement credits and debits, and water quality data.

This information is reported to the court and the parties annually for each water year (October 1 to September 30). SAR flows recorded in the annual Watermaster Report are determined from river gauges managed by the United States Geological Survey (USGS) National Streamflow Information Program. The USGS maintains a SAR flow gauge at the Prado Dam discharge point. The Watermaster Annual Reports present a basic accounting of historic SAR flows.

Santa Ana Watershed Project Authority (SAWPA)

The SAWPA was created in 1972 as a Joint Powers Authority (JPA) mandated to manage water quality within the watershed for multiple beneficial purposes. The SAWPA's member agencies include San Bernardino Municipal Water District (Muni), Western Municipal Water District (Western), Orange County Water District (OCWD), Inland Empire Utility Agency (IEUA), and the Eastern Municipal Water District (Eastern). The SAWPA's initial action was to prepare the Basin Plan under contract to the SARWQCB. SAWPA recently prepared an Integrated Water Resource Plan (IWRP) for the watershed describing the existing water resources, projected demand, and long-range water quality planning needs for the region. The One Water One Watershed program is the basis of the SAWPA Integrated Regional Water Management Plan.

San Bernardino County Municipal Stormwater Management Plan (MSMP)

The purpose of the MSMP was to satisfy NPDES permit conditions for creating and implementing an Urban Runoff Management Program (URMP) to reduce pollutant discharges to the maximum extent practicable (MEP) for protection of receiving waterbody water quality and support of designated beneficial uses. The MSMP contains guidance on both structural and nonstructural BMPs for meeting these goals.

The MSMP identifies activities required to implement the following six minimum control measures required under the Municipal Permit: public outreach; public involvement; illicit discharge detection and elimination; construction site runoff; new development and redevelopment; and municipal operations. Some typical types of outreach may include a stormwater hotline, website, storm drain stenciling, and other programs. Public meetings and presentations, volunteer water quality monitoring groups, and community cleanup days are some of the elements of the public involvement component.

One Water One Watershed

The One Water One Watershed (OWOW) program, is the result of an integrated planning process convened for the management of the Santa Ana River Watershed. The OWOW program integrates water resources management with various disciplines such as land use planning, flood control, and natural resource management. The OWOW plan is now in its second iteration, which was adopted in 2014.

The OWOW plan process complies with the standards of the State of California's Integrated Regional Water Management Program while supporting synergies in planning how to address water challenges across the Santa Ana River Watershed. The OWOW 2.0 Plan describes the next generation of integrated regional watershed planning, solving problems on a regional scale, and giving all water interests a voice in the planning process. The plan provides a blueprint for management of the watershed, which includes the following goals:

- Achieve a watershed that is sustainable, drought-proofed and salt-balanced by 2035, and in which water resources are protected and water is used efficiently;
- Value a watershed that supports economic prosperity and environmental viability;
- Assure a watershed that diminishes carbon emissions and is resilient to climate change;
- Demand a watershed free of environmental injustices;
- Maintain a watershed in which the natural hydrology is protected, restored, and enhanced;
- Instill a water ethic within institutions and people that will make efficient use of water a California way of life.

5.8.3 Thresholds of Significance

For the purposes of this EIR, impacts on drainage, flooding, groundwater recharge, and water quality would be considered significant if the Goals, Policies, and Actions of the General Plan Update would result in any of the following:

- Substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site, or create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems to provide the designed level of flood control

- Substantially alter the existing drainage pattern of the site or area in a manner that would generate substantial additional sources of polluted runoff, substantially degrade water quality, or violate any water quality standards or WDR
- Result in a net deficit in aquifer volume or a lowering of the local groundwater table level at the projects site such that existing uses in the groundwater area of influence that rely on groundwater wells could not be reasonably supported
- Expose people or structures to a significant risk of loss, injury or death involving as a result of the failure of a levee or dam

5.8.4 Environmental Impacts

Would the project substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site, or create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems to provide the designed level of flood control?

Implementation of the General Plan Update could result in an additional 23,492 households and an additional 40,599 employees within the planning area that will entail construction of projects with impervious surfaces. The focus for growth in the General Plan Update is in the Downtown Core of the City and "Livable Corridors" (as described in Chapter 14 - Downtown Area Plan of the General Plan Update) which is currently developed and contains stormwater drainage facilities. The construction of structures and facilities with impervious surfaces in areas where there are currently no impervious surfaces, potentially increasing the rate of stormwater runoff compared to existing conditions. The amount and rate of potential increase in runoff would depend upon site topography, existing infiltration characteristics, distance from receiving drainage, and any planned or designed detention. The City has adopted existing regulations and policies that minimize on- and off-site flooding which can alter drainage patterns or stream course and cause erosion and sedimentation impacts. The floodway and floodplain districts regulations contained in the Municipal Code are specifically designed to prevent and regulate development in flood-prone areas.

MS4s are issued permits based on the size of the municipality. MS4 permit requirements include the reduction of pollutant discharges to the "MEP" and protection of water quality. Requirements also include identification of major outfalls and pollutant loads and control of discharges from new development and redevelopment. Future projects undertaken over the planning horizon of the General Plan Update may cause changes in drainage patterns, increased imperviousness, and other effects that could potentially alter local hydrology that could cause or contribute to local flooding and exceedance of local drainage system capacity. However, the City of Fontana is subject to the NPDES permitting process under its MS4 codified as Title 14 (Storm Drains and Flood Management) of the Municipal Code. Implementation of the requirements of the MS4 permit and other regulations mentioned in this section would ensure that the volume and rate of stormwater runoff from future development would not exceed local drainage volume and flow requirements and would prevent

downstream flooding. This would reduce potential stormwater runoff and drainage impacts to *less-than-significant* levels.

The General Plan Update includes Goals, Policies, and Actions that would further reduce impacts to hydrologic resources. Applicable Goals, Policies, and Actions include the following:

Table 5.8-1 Applicable Goals, Policies, and Actions

Goals & Policies	Action
Chapter 10 Infrastructure and Green Systems Element	
Goal 1: Fontana collaborates with public and private agencies for an integrated and sustainable water resource management program.	
• Support initiatives to provide a long-term supply of the right water for the right use by working with regional providers and the One Water One Watershed Plan.	A. Be active in regional water-resource planning and implementation. B. Continue to participate in the Santa Ana Watershed Authority planning and implementation efforts. C. Advocate with the IEUA for more recycled water and groundwater recharge. D. Use an integrated water- management approach when working on land use and zoning changes. E. Incorporate integrated water- management best practices into land use and zoning initiatives, including water conservation and recycling as well as permeability and infiltration.
Goal 6: Fontana has a stormwater-drainage system that is environmentally and economically sustainable and compatible with regional One Water One Watershed standards.	
• Continue to implement the Water Quality Management Plan for stormwater management that incorporates • Low-impact and green-infrastructure standards. • Promote natural drainage approaches (green infrastructure) and other alternative non-structural and structural best practices to manage and treat stormwater.	A. Continue to maintain traditional stormwater infrastructure as needed, while developing methods to promote ultimate infiltration of the water. B. Explore options for infiltration of water from traditional stormwater facilities. C. Promote simple green-infrastructure retrofits for existing buildings and properties, such as rain barrels. D. Revise development standards to reflect low-impact and green- infrastructure stormwater-management requirements in order to meet or exceed watershed goals. I. Use street parkways and medians to treat and infiltrate runoff in transportation projects, new development, and redevelopment. J. Use permeable surfaces to promote infiltration wherever feasible.

Would the project substantially alter the existing drainage pattern of the site or area in a manner that would generate substantial additional sources of polluted runoff, substantially degrade water quality, or violate any water quality standards or WDR?

The General Plan Update does not consider or analyze specific development projects; therefore, the actual potential for future construction sites or developments associated with the General Plan Update Goals, Policies, and Actions are unknown. The City of Fontana is subject to the NPDES permitting process under its MS4 codified as Title 14 (Storm Drains and Floodplain Management) of the Municipal Code. Although urban runoff is considered a nonpoint of source of pollution, municipal storm drain outlets are readily defined and can be individually monitored, thereby defining them as point sources for the purposes of administering NPDES permits, even though the origin of the source is diffuse. NPDES regulations applicable to the Planning Area are designed to reduce non-point-source pollutant loading through implementation of BMPs and other control measures that minimize or eliminate pollutants from urban runoff, thereby protecting downstream water resources. The City of Fontana implements NPDES provisions through the requirements of its MS4 permit, which is applicable to all portions of the City. BMPs implemented to address residential pollutant sources generally revolve around educational programs. Commercial and industrial development is subject to annual inspections to ensure implementation of BMPs and educational programs. Implementation of the requirements of the MS4 permit and other regulations mentioned in this section would ensure that the volume and rate of stormwater runoff from future development would not exceed local drainage volume and flow requirements and would prevent downstream flooding. This would reduce potential stormwater runoff and drainage impacts to *less-than-significant* levels. As noted above, the General Plan Update includes Goals, Policies, and Actions that would further reduce impacts to hydrologic resources as noted above.

Would the project result in a net deficit in aquifer volume or a lowering of the local groundwater table level at the projects site such that existing uses in the groundwater area of influence that rely on groundwater wells could not be reasonably supported?

Future development within the Planning Area would require additional water services that would come from local groundwater sources. Future development may also impact groundwater recharge by increasing impervious surfaces that could hinder percolation of drainage into subsurface aquifers. Future development could also impact groundwater recharge if existing spreading grounds are altered (e.g., developed upon) without construction of replacement facilities. Additionally, drainage may be directed away from its natural source where it may be deposited in other water bodies. Impacts associated with depleted groundwater supplies included increased demand on out-of-region water resources and the energy and cost associated with the importing of other resources. The lowering of aquifer and groundwater levels in an area can cause existing wells and pumps to become non-functional if they are not designed to extract water below certain depths.

The General Plan Update does not consider or analyze specific development projects; therefore, the actual potential for future construction sites or developments associated with the General Plan Update Goals, Policies, and Actions are unknown. Furthermore, the Santa Ana River Watershed, including the Santa Ana Groundwater Basin, are managed by an adjudication and subject to the terms of the 1969 Stipulated Agreement managed by the SAR Watermaster. The Santa Ana River Watershed includes programs for the long-term management of area groundwater basins. The primary means of ensuring long-term groundwater level maintenance includes careful monitoring to ensure groundwater levels are managed within a safe basin operating range and implementation of water conservation programs. The General Plan Update supports water conservation through use of natural and drought-tolerant vegetation and through water recycling. Additionally, water conservation programs of the General Plan Update are designed to ensure groundwater resources are recharged both through natural and assisted means. Water conservation helps to maintain groundwater levels by reducing the need to extract from them. As a result, the potential for impacts to groundwater levels within the region is less than significant**.** As noted above, the General Plan Update includes Goals, Policies, and Actions that would further reduce impacts to hydrologic resources.

Would the project expose people or structures to a significant risk of loss, injury or death involving as a result of the failure of a levee or dam?

The General Plan Update does not consider or analyze specific development projects; therefore, the actual potential for future construction sites or developments associated with the General Plan Update Goals, Policies, and Actions are unknown. However, some future development could result in the construction of certain structures and infrastructure in the SAR floodplain that would be exposed to flood conditions from the 100-year flood event as mapped by the FEMA in the FIRM for the area. Furthermore, the City of Fontana is not located in a mapped dam inundation area.

There are areas shown on the FIRM as having minimal risk from the failure or overtopping of a levee or flood control channel. These are on the Hawker Crawford Channel, the Etiwanda/San Sevaine Channel, San Sevaine Channel, and West Fontana Channel. These are either delineated as Shaded Zone X (i.e., areas protected from flooding by a levee), Zone X (i.e., 500-year floodplain), Zone A (i.e., no base flood elevations determined), or Zone AO (i.e., depth 1 foot) on the FIRM.

As a community that participates in the NFIP, the City has specific ordinances that require permits for such development, and the conditions contained in these permits are designed to reduce the potential risk and impacts of flooding. Therefore, impacts from flooding due to a 100-year event or from the failure of a levee or dam would be *less than significant.* As noted above, the General Plan Update includes Goals, Policies, and Actions that would further reduce impacts to hydrologic resources.

5.8.5 Mitigation Measures

No mitigation measures are required that would further reduce the identified less than significant impacts.

5.8.6 References

Federal Emergency Management Agency. 2017. Effective Flood Insurance Rate Map (FIRM) for Fontana, CA.

National Water Research Institute. 2004. Report of the Scientific Advisory Panel, Orange County Water District's Santa Ana River Water Quality and Health Study. August 2004.

Orange County Water District. 2004. Santa Ana River Water Quality and Health Study Final Report.

Santa Ana Regional Water Quality Control Board. 1995. Water Quality Control Plan Santa Ana Region (#8).

Santa Ana Regional Water Quality Control Board. 2002. Amendments to the Santa Ana Region (#8) Water Quality Control Plan

Santa Ana River Watermaster. 2005. Thirty-Fourth Annual Report of the Santa Ana River Watermaster.

Santa Ana Water Project Authority. 2017. One Water One Watershed Plan 2.0. http://sawpa.maps.arcgis.com/apps/MapJournal/index.html

State Water Resources Control Board. 2002. IV. Groundwater Quality Assessment. California's 305(b) Report

State Water Resources Control Board. Appendix D: Attachment to Resolution No. R8-2003-039 Amendment to the Santa Ana Region Basin Plan. Swrcba.gov/rwqcb8/pdf/tmdl/appendix.pdf.

5.9 LAND USE

This section describes the existing land use pattern and land use planning/regulatory framework in the City of Fontana. It also evaluates potential long-term land use impacts such as physically dividing an established community and consistency with environmental planning efforts. This section does not evaluate potential impacts on habitat conservation or natural community conservation plans; these are discussed in Section 5.3. Several comments regarding land use and planning were received in response to the Notice of Preparation, particularly with regard to land use compatibility. To the extent the issues relate to the significance criteria, they are addressed in the Impact section below.

5.9.1 Existing Conditions

5.9.1.1 Historic Land Use Trends

There have been four Fontanas over the last 150 years, and Fontana is currently facing a new transition. First, permanent vineyard settlements encroached on the Native American societies in the San Bernardino Valley in the 1880s to the early 20th century. After the arrival of A.B. Miller, the Fontana Farms' "Partnership of Hens and Oranges" spanned 1906 to 1942. Kaiser Steel remade Fontana into a steel town between 1942 and 1983. Most recently, Fontana in the 1980s began to transition to an identity as an affordable suburb in the sprawling metropolitan world of Southern California. This most recent transformation reached its peak just before the Great Recession of 2007. After riding the real estate bubble, Fontana joined other communities in the Inland Empire as one of the most battered areas by the recession, with high unemployment, slashed real estate prices, high levels of foreclosure, and almost no construction. Fontana has gradually recovered from the recession. Now, as the third most populous city in the Inland Empire, Fontana is poised to build on its success as a residential city and enter a new period of positive transformation.

5.9.1.2 Existing Land Use Distribution

The City of Fontana encompasses approximately 37 square miles of incorporated area, with an additional fifteen square miles in the City's Sphere of Influence (SOI). The majority of the SOI is located in the unincorporated "island" west of the city limits. Also located within the SOI is an area north of I-15 to the national forest boundary with pockets of land adjacent to the eastern city limits.

Residential land uses account for nearly 50% of the occupied or used (not vacant) land in Fontana. Since much of the vacant land has been entitled for residential development, the majority of land is expected to be in residential use in the future. Foothill Boulevard, Sierra Avenue, Valley Boulevard, and SR-210 are the primary commercial corridors of the city. The heaviest industrial land uses are concentrated in the southwest, including areas within Fontana's SOI. Fontana also has 27 specific plans, of which 17 are fully developed, five are partially developed, and five are undeveloped.

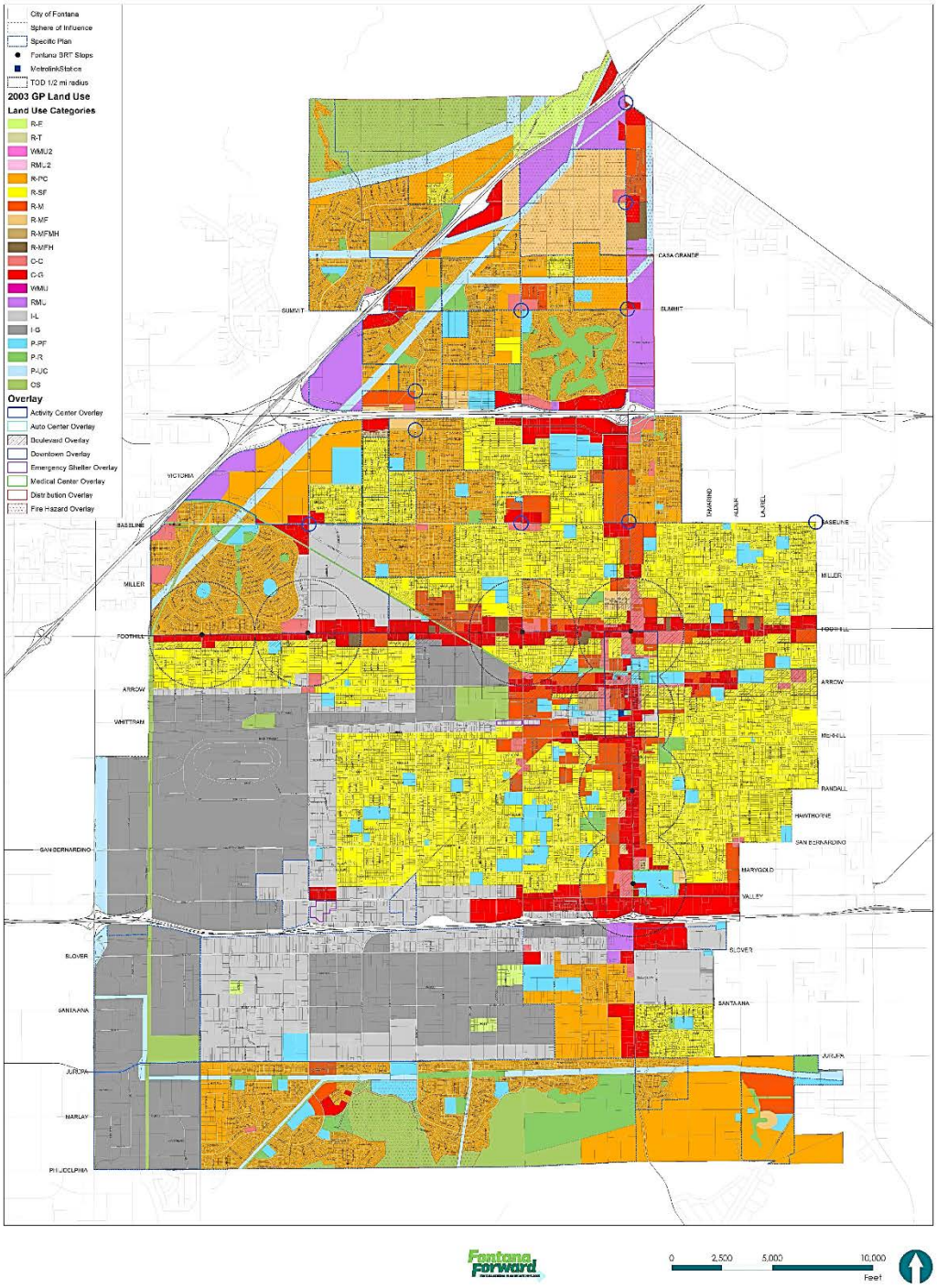


Figure 5.9-1 Existing Land Use

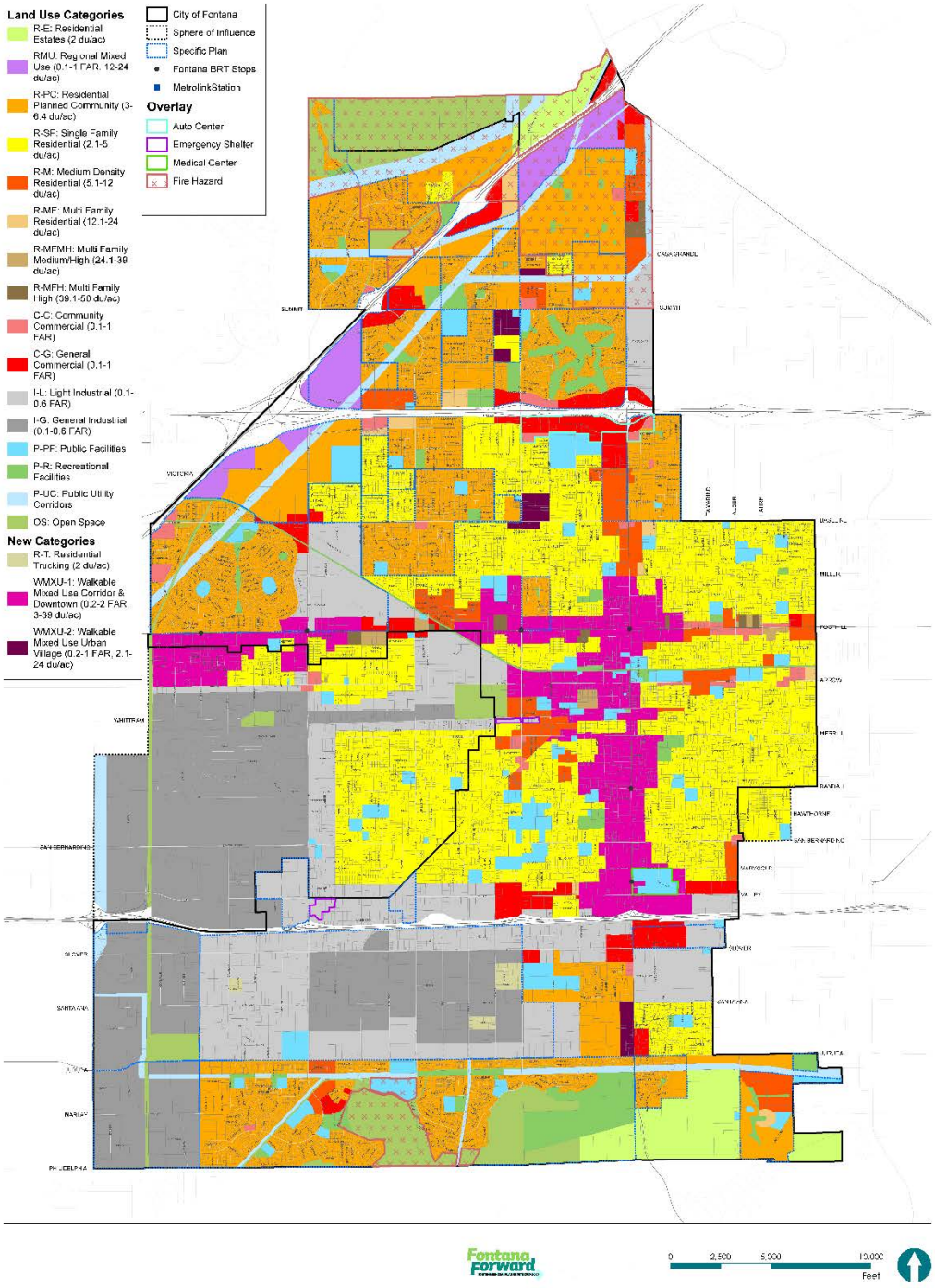


Figure 5.9-2 Proposed Land Use

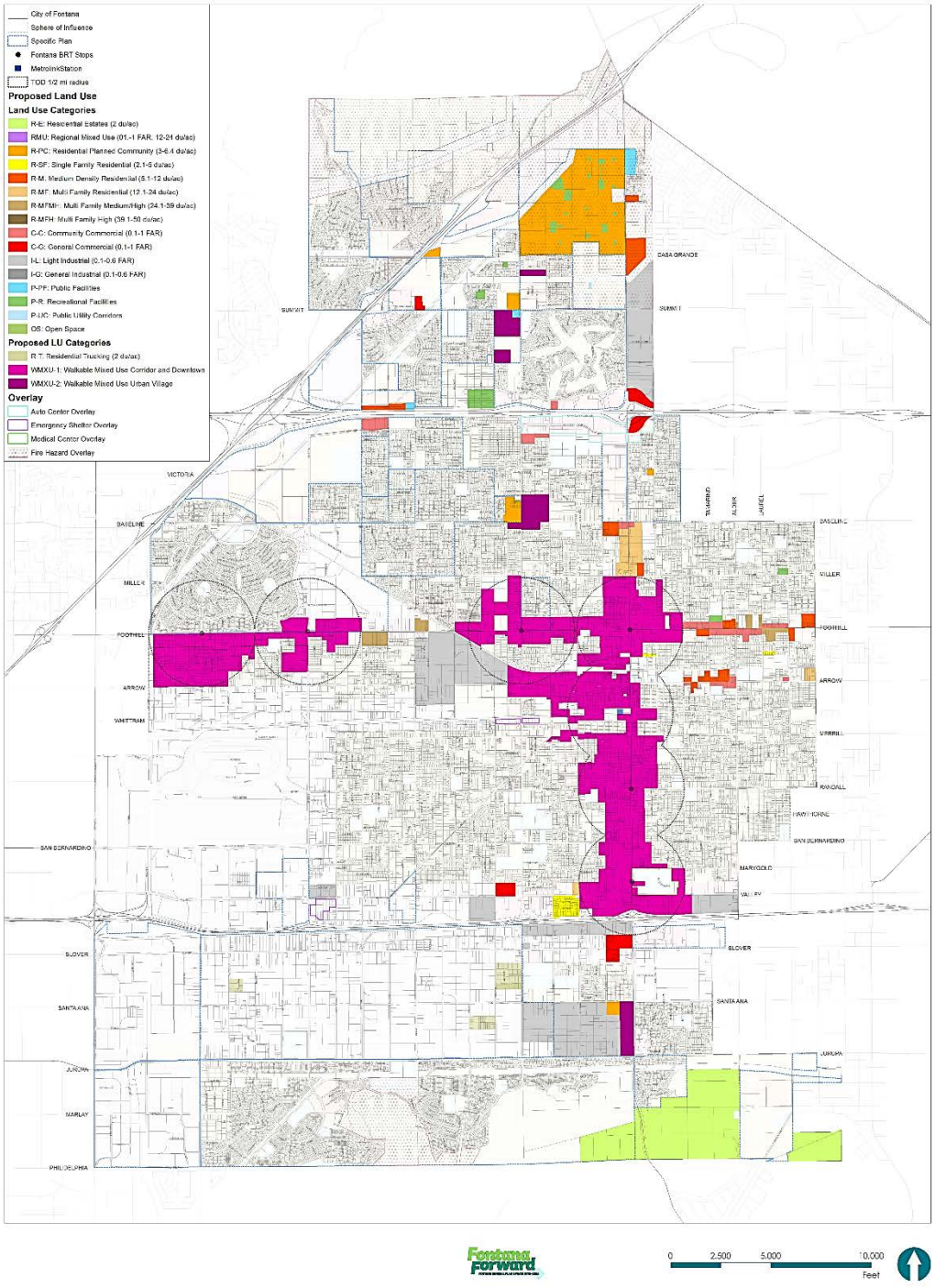


Figure 5.9-3 Proposed Land Use Changes

5.9.1.3 Existing Planning and Regulatory Frame Work

Southern California Association of Governments (SCAG)

The SCAG is responsible for regional planning in the six-county Southern California area, which encompasses Los Angeles, Imperial, Orange, Riverside, San Bernardino, and Ventura counties. SCAG provides a framework to coordinate local and regional decisions regarding future growth and development and prepares future growth forecasts for the region. As the designated Metropolitan Planning Organization for the area, SCAG's responsibilities include researching and developing plans for transportation, growth management, hazardous waste management, and air quality based on the regional growth projections (SCAG 2015).

San Bernardino County Local Agency Formation Commission (LAFCO)

The San Bernardino County LAFCO is a State-mandated, independent agency with countywide jurisdiction over changes in organization and boundaries of cities and special districts within San Bernardino County, including San Bernardino (LAFCO 2018). The San Bernardino LAFCO has the responsibility to ensure the establishment of an appropriate, sustainable, and logical municipal level government structure for the distribution of efficient and effective public services**.** As discussed above, three unincorporated areas lie within the SOI of the City of Fontana.

San Bernardino County General Plan

The Fontana General Plan area contains unincorporated areas that are within the City's SOI and thus under the jurisdiction of the San Bernardino County General Plan. San Bernardino County began a process to update its General Plan with a target adoption date of 2019 The Countywide Plan is intended to "go well beyond a traditional general plan to become a comprehensive Countywide Plan that complements and informs the Countywide Vision by taking into account all services—not just land-use planning—provided by County Government, and the unique values and priorities of each unincorporated community. It will serve as a guide for County decision-making, financial planning, and communications." (San Bernardino County, 2018).

City of Fontana General Plan

The General Plan, required for every city and county by the State of California, is the City's comprehensive community planning document. Any planning or zoning actions the City takes must be consistent with the General Plan. The General Plan consists of several mandatory elements, along with many optional elements. The Fontana Forward plan includes these elements, stand-alone or combined, as required by statute (Gov. Code section 65302): land use; circulation; housing; conservation and open space combined; noise and safety combined; and environmental justice as aspects of several other elements. In addition, the plan includes optional elements on health, economic development, infrastructure, sustainability and resilience, and a Downtown Area Plan. All elements were updated in 2018, except for the Housing Element, which was updated in 2014.

The new Land Use Element establishes the following land use categories:

1. Residential Estates
2. Residential Planned Community
3. Single-Family Residential
4. Medium-Density Residential
5. Multi-Family Residential
6. Multi-Family Medium/High
7. Multi-Family High
8. Residential Trucking
9. Community Commercial
10. General Commercial
11. Light Industrial
12. General Industrial
13. Public Facilities
14. Recreational Facilities
15. Public Utility Corridors
16. Open Space
17. Regional Mixed Use
18. Walkable Mixed-Use Downtown and Corridors (Proposed)
19. Walkable Mixed-Use Urban Village (Proposed)

Land Use Acreage Comparison

The Future Land Use Map established two new mixed-use categories for Walkable Mixed Use (WMU). These categories are very different in character from the land use categories that have been retained from the Existing Land Use Map.

Walkable Mixed-Use Downtown and Corridors (WMXU-1) residential densities range from 24 to 39 dwelling units per acre and non-residential uses have a maximum Floor Area Ratio (FAR) of 2.0.

Walkable Mixed-Use Urban Village (WMXU-2) residential densities range from 12 to 24 dwelling units per acre, and non-residential uses can have up to an FAR of 1.0. These two new mixed-use land use designations total approximately 2,057 acres. Table 5.9-1 is a chart of the difference in acreages of the 2003 General Plan and the 2018 General Plan Update.

Table 5.9-1 Difference in Acreages of the 2003 General Plan and the 2018 General Plan Update

Land Use	2003 General Plan (acres)**	2018 General Plan Update (acres)*	Difference +/-
Residential	15,723	15,474	-249
Commercial	2,425	1,170	-1,255
Industrial	8,149	8,526	+377
Mixed-Use	1,075	2,564	+1,489
Public	3,710	3,328	-382
Open Space	1,569	1,599	+30
Total	**33,428***	**33,454***	
*Source: General Plan Update (Chapter 15), City of Fontana **Source: 2003 Environmental Impact Statement, City of Fontana * Total acreage includes roads and right-of-way not shown on chart			

City of Fontana Zoning and Development Code (Zoning Code)

Chapter 30 of the Municipal Code, the City's Zoning Code, is the General Plan's primary implementation tool. Whereas the General Plan is a policy document and sets forth direction for land use policy-level decisions, the Zoning Code is a regulatory document that establishes specific standards for the use and development of all properties in the City, as well as subdivision regulations. The Zoning Code regulates development intensity using a variety of methods, such as setting limits on building setbacks, yard landscaping standards, and building heights. The Zoning Code also indicates the permitted land uses in the various zones.

City of Fontana v. SOI Land Use Policies

Land use policies from properties within the City's SOI are governed by the San Bernardino County General Plan. The Fontana General Plan applies land use designations that represent the City's preferences and intent on governing these properties, if annexed. Table 5.9-2 (City and County Land Use Designation Comparison) compares the land use designations between the City and the County for properties within the SOI.

Table 5.9-2 City and County Land Use Designation Comparison

Unincorporated Parcels	City of Fontana		San Bernardino County	
	Designation	***Density/Intensity***	***Designation***	***Density/Intensity***
Mountain	OS: Open Space	N/A	SD-RES Special Development - Residential	Minimum lot size 5 acres
	P-UC: Public Utility Corridors	N/A	FW Floodway	N/A
	P-UC: Public Utility Corridors	N/A	IN Institutional	N/A
	R-E: Residential Estates	2 du/ac	RL Rural Living	Minimum lot size 2.5 acres
	R-E: Residential Estates	2 du/ac	RS-1 Single Residential 1 acre minimum	1 du/ac
Speedway	C-C: Community Commercial	0.1-1 FAR	(CG) General Commercial	N/A
	WMXU-1 Walkable Mixed-Use Corridor & Downtown	0.2-2 FAR, 3 – 39 du/ac	(CG) General Commercial	N/A
			CN Neighborhood Commercial	N/A
			RS Single Residential	4 du/ac
			RM Multiple Residential	20 du/ac
	I-L: Light Industrial	0.1-0.6 FAR	IC Community Industrial	.45 – 1 FAR
	I-G: General Industrial	0.1-0.6 FAR	IR Regional Industrial	.55 – 1 FAR
	I-G: General Industrial	0.1-0.6 FAR	SD-COM Special Development Commercial	N/A
	I-G: General Industrial	0.1-0.6 FAR	KC-SP Kaiser Commerce Center/Specific Plan	N/A
	R-SF: Single Family Residential	2.1-5 du/ac	RS Single Residential	4 du/ac
	P-PF: Public Facilities	N/A	RS Single Residential	4 du/ac
	R-SF: Single Family Residential	2.1-5 du/ac	RM Multiple Residential	20 du/ac
	C-G: General Commercial	0.1-1 FAR	CG General Commercial	N/A
Bloomington	R-SF: Single Family Residential	2.1-5 du/ac	RS Single Residential	4 du/ac
	P-PF: Public Facilities	N/A	IN Institutional	N/A

Specific Plans

A specific plan is a detailed plan for the development of a particular area. Specific plans provide specifications for the permitted land use types, development standards (setbacks, heights, landscape, architecture, etc.), circulation, and infrastructure improvements broadly defined by the General Plan. By law, a specific plan must be consistent with the General Plan. Specific plans are often used to ensure multiple property owners and developers adhere to a single common development plan, as well as to provide flexibility in development standards beyond those contained in the zoning ordinance as a means of achieving superior design.

5.9.2 Thresholds of Significance

The General Plan Update would result in a significant land use impact if it would:

A. Physically divide an established community.

B. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.

C. Conflict with any applicable habitat conservation plan or natural community conservation plan.

5.9.3 Environmental Impacts

A. The General Plan Update would not result in a division of an established community.

Division of a neighborhood may occur with the construction of a new freeway, railway, or other large transportation project that may run through an established community. Impacts associated within the division of an established community include a loss of community identity, disruption or loss of connectivity, and a degradation of the historic character of an area.

The General Plan Update represents a policy-level project designed to direct long-term growth within the planning area. The City has many long-established residential neighborhoods as well as newer developments. The proposed updated General Plan Land Use Map would retain the City's commercial, industrial, and residential character. However, the Walkable Mixed-Use land uses are introduced in the City's downtown core. Neither would they indirectly lead to the division of an established community, as the changes would not trigger the development of major new infrastructure (such as major roads or freeways, power easements or water conveyance facilities), which could physically divide existing developed areas of the City. The Walkable Mixed-Use Downtown and Corridors (WXMU-1) and Walkable Mixed-Use Urban Village (WMXU-2) are designed to promote pedestrian and bicycle-friendly development, increase housing diversity, increase transit use, and ensure economic vitality in the downtown and along important corridors. These new mixed-use land use categories would not impact established communities since the land use categories encourage infill development on vacant parcels and

enhance community character. The Walkable Mixed-Use Zone is proposed to provide flexibility in zoning and development of downtown's vacant and underutilized lots. In addition, the mixed-use land uses allow for safe and convenient walking to nearby shopping and maintenance of established neighborhoods through the following goals and policies in the General Plan Update. Therefore, potential impacts would be less than significant.

Table 5.9-3 General Plan Update Goals and Policies

Goals	Policies
Goal 2: Fontana development patterns support a high quality of life and economic prosperity.	A. Preserve, protect, and connect existing master-planned neighborhoods. B. Recognize and respect that the established design patterns of many of Fontana's existing neighborhoods are unique and different from policies for new and future neighborhoods. C. Create "Connected Neighborhood" planning districts that link established master planned neighborhoods to each other and to nearby school, park, and shopping destinations with walking and biking routes. G. Ensure that existing and future employment districts have appropriate land use, zoning, and urban design transitions to nearby neighborhoods.
Goal 3: Downtown is a dynamic center of activity with new housing options, walkable, environments, and a mixture of uses attracting residents and visitors.	B. As a top-level priority, undertake complete streets improvements along Sierra and Arrow to rebrand Downtown businesses, customers, and infill development.
Goals 4: Compact, walkable, mixed-use centers occupy key locations along corridors to be served by transit in the future and at intersections where neighborhood retail and diverse housing options can succeed.	E. Support partnerships between major employers, educational institutions, and for-profit and non-profit housing developers. F. Collaborate with educational institutions and arts organizations to develop education and arts centers along Sierra Avenue. L. Collaborate with public transportation agencies to coordinate the location and design of new centers with existing and planned transit stops. M. Work collaboratively with existing property owners and businesses to develop a vision plan and development standards and guidelines for the Valley Boulevard Corridor. O. Consolidate parcels along Valley Boulevard to promote redevelopment for valuable and job-producing uses. P. Ensure that existing and new businesses along the north side of Valley Boulevard are appropriately buffered from existing and future neighborhood development to the north.

B. The General Plan Update would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project, as discussed in other sections of this environmental impact report (EIR).

None of the changes in the General Plan Update would affect plans, policies, or regulations of other agencies that have jurisdiction within the planning area. In fact, some of the changes in the General Plan Update are proposed to reflect and address new policies and regulations of other agencies such as those relating to climate-change.

With regard to state policy frameworks, the goals, policies, and actions of the General Plan Update are consistent with State of California climate-change policy framework. The vision of the California Climate Strategy is to reduce greenhouse gas emissions to 40% below 1990 levels by 2030. This is consistent with the City of Fontana's General Plan Update Goals and Policies. Specifically Goal 4, which states "Fontana meets the greenhouse gas reduction goals for 2030 and subsequent goals set by the state." With regards to the San Bernardino County General Plan, the goals, policies, and actions of the Fontana General Plan Update are consistent with the adopted San Bernardino Countywide Vision. The San Bernardino Countywide Vision illustrates the "support for creation of environments and protection of rural lifestyles to design senses of place that reflect local community values and history" (SBCV, 2011). Similarly, the City of Fontana General Plan Update reiterates these visionary elements by encouraging a complete price range of housing from affordable to luxury and the improvement of livability and energy efficiency through smart planning, design, and technology. Goals and Policies of the General Plan Update are consistent with the San Bernardino County's General Plan. The Countywide Plan is intended to "go well beyond" a traditional general plan to become a comprehensive Countywide Plan that complements and informs the Countywide Vision by taking into account all services, not just land-use planning, provided by the County Government.

San Bernardino County has jurisdiction over land uses within the SOI and there is a proposed application for a project within the SOI. The proposed project is subject to a variety of Federal, State, and locally adopted plans designed to mitigate environmental impacts or to preserve important resources. Plans and policies related to specific resource issues are addressed in those specific sections of this EIR.

No conflicts between the specific resources and a policy or regulation of another agency would occur as a result of the proposed project. Therefore, impacts would be less than significant.

C. No impact related to conflicts between the proposed General Plan Update and existing Habitat Conservation Plans would occur.

None of the land use changes proposed in the General Plan Update would conflict with the North Fontana Multiple Species Habitat Conservation Plan (MSHCP), since no land use changes are proposed in affected areas. Therefore, impacts would be less than significant.

Table 5.9-4 General Plan Update Goals and Policies

Goals	Policies
Goal 1: Fontana continues to preserve sensitive natural open space in the foothills of the San Gabriel Mountains and Jurupa Hills.	A. Evaluate the potential costs and benefits of permanent protection of sensitive foothill lands. B. Work with regional conservation organizations, such as the Inland Empire Resource Conservation District and regional conservation land trusts, to conserve sensitive foothill lands.
Goal 2: Large city parks and open spaces include plantings and natural areas attractive to birds and other wildlife.	A. Design parks and landscaped public spaces to include plantings attractive to birds and other regional wildlife. B. In large parks, create natural areas with educational information to raise public awareness about local environments. C. Consider wildlife value when landscaping public spaces
Goal 4. The City of Fontana has a no-net-loss policy for public parkland.	A. Develop the legal framework and language to pass a no-net-loss ordinance for city-owned park land listed in the California Protected Lands database. B. Research and write an ordinance to require that City-owned public park land (as defined in the ordinance) cannot be transferred or converted to another use without an analysis of alternatives, public hearings, and substitute land of equal value (as defined) received by the City.

5.9.4 Mitigation Measures

No significant impacts are anticipated. Therefore, mitigation measures are not required.

5.9.5 References

California Climate Change Strategy. May 10, 2018. General information from website:
http://www.climatechange.ca.gov/

San Bernardino Countywide Vision. June 30, 2011. General information from website:
http://www.sbcounty.gov/Uploads/CAO/Vision/vision.pdf

LAFCO 2018. General information from website: http://www.sbclafco.org/

San Bernardino County, 2018. General information from website:
http://www.sbcounty.gov/Uploads/CAO/Vision/vision.pdf

SCAG 2015. General information from website:
http://www.scag.ca.gov/NewsAndMedia/Pages/PublicationsReports.aspx

SCAG (Southern California Association of Government). 2016. 2016-2040 Regional Transportation Plan: Sustainable Communities Strategy, April 2016.

SCAG (Southern California Association of Government). 2018. General information from website: https://www.scag.ca.gov/about.

5.10 NOISE

This section analyzes potential noise impacts that could result from implementation of the proposed General Plan Update. The General Plan Update combines the Goals and Policies of the Noise and Safety Elements of the 2003 General Plan into one "Noise and Safety Element" supported by recent data (refer to Chapter 11 Noise and Safety of the General Plan Update). For the purposes of this analysis, only potential noise impacts are discussed here.

The Noise and Safety Element identifies and discusses potential noise issues and exposure in the City of Fontana and provides an integrated approach to regulating noise, consistent with the Zoning and Development Code. The generation of noise associated with the General Plan Update implementation would occur over the short-term from site preparation and construction, and over the long-term from site occupation with noise generated primarily through the use of motor vehicles.

5.10.1 Environmental Setting

The General Plan Update area encompasses approximately 52-square miles of San Bernardino County, which includes the City of Fontana. Industrial and trucking-based industries continue to prosper in Fontana due to the City's location at the crossroads of major trade routes (Interstates 10, 15, and 210) and the presence of the Union Pacific Railroad. Noise within the City is generated by numerous sources, primarily vehicular traffic on public roadways, as well as nearby aircraft and rail operations, albeit relatively less by comparison. Other activities such as construction, operation of household power tools and appliances, and industry, also contribute to increasing background noise.

5.10.1.1 On-Road Vehicles

The most prevalent source of noise within the City of Fontana is from operation of on-road vehicles on City streets and local freeways. The level of traffic noise depends on several factors: traffic volumes, the speed of traffic, the type or "mix" of vehicles using a particular roadway, and pavement conditions. Vehicle noise is attributed to noise produced by the engine, exhaust and tires.

5.10.1.2 Aircraft

The LA/Ontario International Airport is located to the west of the City of Fontana and has a flight path that typically follows Santa Ana Avenue. Airports produce different levels of noise depending on the aircraft flown, the number of flights and the flight paths. Larger and heavier aircraft can produce more noise. Aircraft noise is attributed to engines themselves, which occur from high velocity exhaust gases and the air flow in the fan system, as well as the airframe (e.g., wings, flaps, and landing gear).

The 1990 Noise Impact Map of the LA/Ontario Airport, which was in effect at the time of the 2003 General Plan, has been updated. The updated map modified the noise contours for the LA/Ontario Airport considerably. The map for forecasted 2020 conditions shows the 65 dB contour extending to the intersection of East Santa Ana Street and South Wineville Road in Ontario, which are outside the boundary of the western edge of Fontana (refer to Figure 5.10-1).

5.10.1.3 Railroads

There are two railroad corridors located within the project area: Union Pacific line located south of 1-10, and the MetroLink line located south of Arrow Highway and immediately adjacent to Fontana's downtown district. Noise impacts associated with rail activities depend on a variety of factors, such as: the type of train, the length of train, the physical track conditions, the geometry and intervening structures between the rail line and its receptor, the number of trains operating during the daytime and nighttime, and the speed of the train. Additionally, if the horn is required to sound a warning (typically at at-grade crossings), the noise level impact will be greater to those nearest the railroad crossing.

5.10.2 Thresholds of Significance

In accordance with Appendix G of the State *California Environmental Quality Act* (CEQA) Guidelines, the proposed project could result in potentially significant impacts related to noise if it results in:

- Exposure of persons or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- 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, exposure of people residing or working in the project area to excessive noise levels.
- For a project within a vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

The applicable noise standards governing the General Plan area are outlined in the City of Fontana Municipal Code of Ordinances, specifically Chapter 18 (Nuisances), Article II (Noise) (City of Fontana). Mobile sources of noise, such as truck deliveries and railroad operations, are exempt from local ordinance but are still subject to CEQA and would be significant if the project being evaluated generates a volume of traffic which would result in a substantial increase in mobile source-generated noise to sensitive land uses in incompatible noise areas.

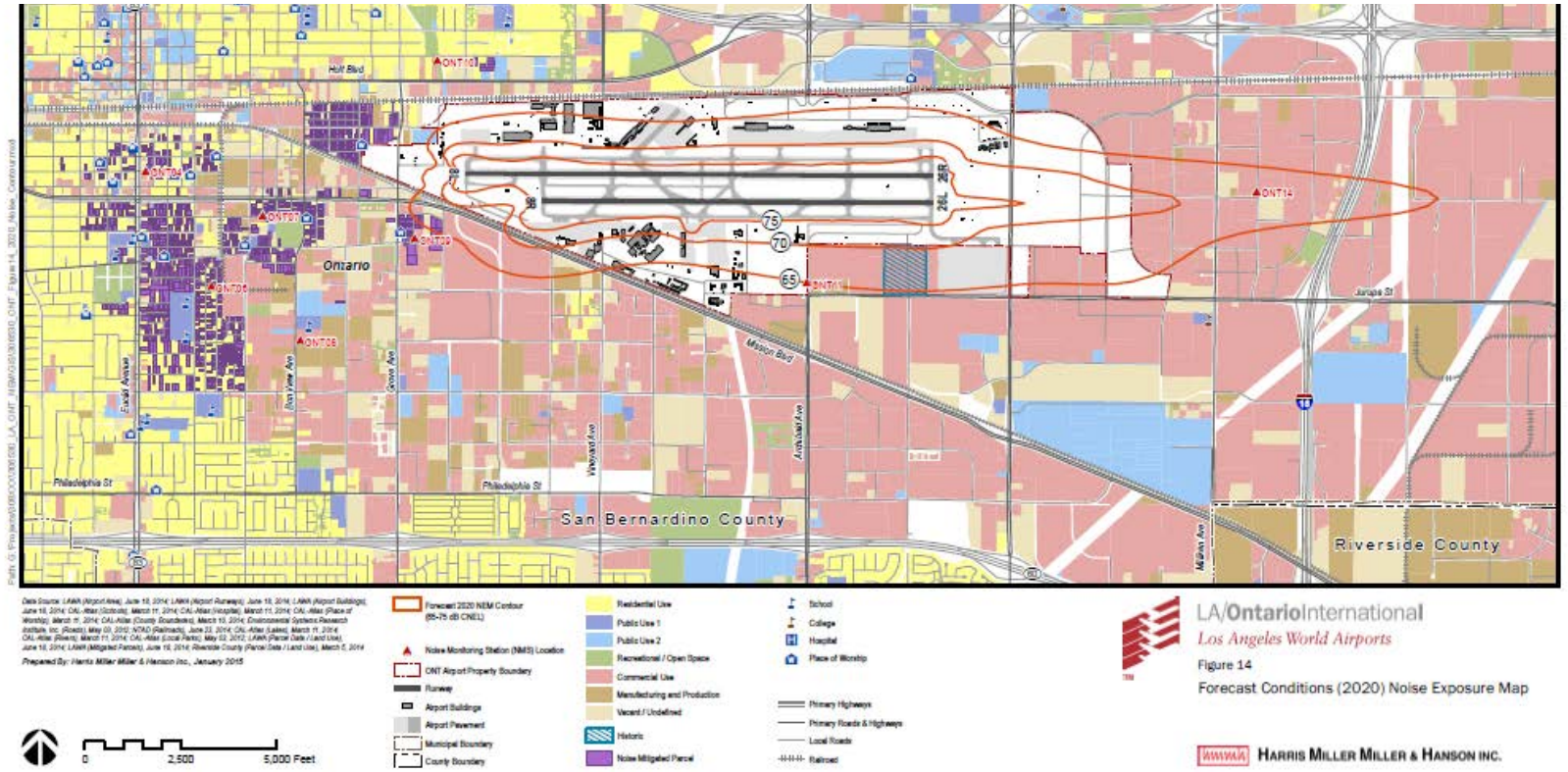


Figure 5.10-1 Forecast Conditions (2020) Noise Exposure Map

There are three main categories associated with noise impacts as detailed below (only audible changes in noise level are considered potentially significant):

1. Audible – refers to increases in noise levels that are perceptible to humans, generally refers to a change of 3 dBA or more since this level has been found to be barely perceptible in exterior environments; a change of 5 dBA is readily audible to most people in an exterior environment.
2. Potentially audible – refers to a change in noise level between 1 and 3 dBA. This range of noise levels was found to be noticeable to sensitive people in laboratory environments.
3. Inaudible – refers to noise level of less than 1 dBA that are typically "inaudible" to the human ear except under quiet conditions in controlled environments.

It should be noted that this analysis is conducted as part of the Program environmental impact report (EIR) for the General Plan Update. Therefore, site-specific, case-by-case analyses of project impacts from noise will be completed by the City when specific development is proposed in the future.

5.10.3 Environmental Impacts

The main goal of the General Plan Update Noise and Safety Element is to combine the Noise and Safety Elements of the 2003 General Plan into one Noise and Safety Element using the latest data available. New findings relative to the Noise and Safety Element outlined in the General Plan Update includes updated information pertaining to airport noise impacts. These are discussed in Section 5.1.3 below. All other environmental impacts discussed are similar to those presented in the 2003 General Plan EIR, as summarized below.

Would the Project expose persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Future development associated with the implementation of the General Plan Update could generate noise levels in excess of standards from construction activities, such as crew commutes, transport of construction equipment and materials to sites, and grading and building construction. Implementation of the General Plan Update could also result in increased traffic from individual projects, thereby increasing noise levels along existing and future roadways.

With respect to construction impacts, construction or repairing of buildings or structures under the proposed General Plan Update would be restricted by City ordinance to 7:00 am to 6:00 pm on weekdays and between 8:00 am and 5:00 pm on Saturdays, except in case of urgent necessity in the interest of public health and safety, and then only with a permit from the building inspector (Municipal Code of Ordinances, Chapter 18, City of Fontana).

With respect to operations impacts, while future development under the General Plan Update could result in the exposure to persons to or generate noise levels in excess of City standards, potential increases in noise levels would be assessed in conjunction with the city's review of site-

specific noise impact analysis. In accordance with the City of Fontana Municipal Code of Ordinances (Chapter 18), standards for exterior and interior noise levels have also been established to protect residents from noise levels in excess of acceptable levels. In the event significant impacts are anticipated, appropriate mitigation would be developed at that time.

In addition, the General Plan Update includes Goals, Policies, and Actions that pertain to protecting new development from noise impacts through compatible use with surrounding areas, road maintenance standards, and setbacks. Applicable Goals, Policies and Actions include the following shown in Table 5.10-1.

Table 5.10-1 General Plan Update Goals, Policies, and Actions that Pertain to Protecting New Development from Noise Impacts

Goals & Policies	Actions
Noise and Safety Element	
Goal 1: The City of Fontana protects its sensitive land uses from excessive noise through diligent planning through 2016.	
• New sensitive land uses shall be prohibited in incompatible areas. • Noise-tolerant land uses shall be guided into areas irrevocably committed to land uses that are noise-producing, such as transportation corridors. • Where sensitive uses are to be placed along transportation routes, mitigation shall be provided to ensure compliance with State mandated noise levels. • Noise spillover or encroachment from commercial, industrial and educational land uses shall be minimized into adjoining residential neighborhoods or noise-sensitive uses.	A. The following uses shall be considered noise-sensitive and discouraged in areas in excess of 65 dBA CNEL (Community Noise Equivalent Level): Residential Uses; Hospitals; Rest Homes; Long Term Care Facilities; and Mental Care Facilities. B. The following uses shall be considered noise-sensitive and discouraged in areas in excess of 65 Leq(12) (Equivalent Continuous Sound Level): Schools; Libraries; Places of worship; and Passive Recreation Uses. C. The State of California Office of Planning and Research General Plan Guidelines shall be followed with respect to acoustical study requirements.
Goal 2: The City of Fontana provides a diverse and efficiently operated ground transportation system that generates the minimum feasible noise on its residents through 2035,	
• All noise sections of the State Motor Vehicle Code shall be enforced. • Roads shall be maintained such that the paving is in good condition and free of cracks, bumps, and potholes. • Noise mitigation measures shall be included in the design of new roadway projects in the City.	A. On-road trucking activities shall be regulated in the City to ensure noise impacts are minimized including the implementation of truck-routes implemented through traffic studies. B. Development that generates increased traffic and subsequent increases in the ambient noise level adjacent to noise-sensitive land uses shall provide appropriate mitigation measures.

Table 5.10-1 General Plan Update Goals, Policies, and Actions that Pertain to Protecting New Development from Noise Impacts

Goals & Policies	Actions
	C. Noise mitigation practices shall be employed when designing all future streets and highways, and when improvements occur along existing highway segments. These mitigation measures will emphasize the establishment of natural buffers or setbacks between the arterial roadways and adjoining noise-sensitive areas.
Goal 3: The City of Fontana's residents are protected from the negative effects of "spill over" noise.	
• Residential land uses and areas identified as noise sensitive shall be protected from excessive noise from non-transportation sources including industrial, commercial, and residential activities and equipment.	A. Projects located in commercial areas shall not exceed stationary-source noise standards at the property line of proximate residential or commercial uses, as appropriate. B. Industrial uses shall not exceed commercial or residential stationary source noise standards at the most proximate land uses, as appropriate. (Industrial noise may spill over to proximate industrial uses so long as the combined noise does not exceed the appropriate industrial standards.) C. Non-transportation noise shall be considered in land use planning decisions. D. Construction shall be performed as quietly as feasible when performed in proximity to residential or other noise sensitive land uses.

Would the Project expose persons to or generation of excessive groundbourne vibration or groundbourne noise levels?

Vibration can lead to structural damage and general annoyance to the public. Construction activities and heavy vehicle traffic are common sources of groundbourne vibration and noise. Equipment or activities typical of continuous vibration include excavation equipment, static compaction equipment, vibratory pile drivers, and pile-extraction equipment. Equipment or activities typical of transient or low-rate repeated impact vibration include impact pile drivers, blasting, and crack-and-seat equipment.

Construction under the General Plan Update is not anticipated to require blasting activities, but pile driving could occur and produce vibration that could impact nearby land uses. These vibrations pose both a nuisance and potential risk to proximate structures.

However, construction or repairing of buildings or structures would be restricted by City ordinance to 7:00 am to 6:00 pm on weekdays and between 8:00 am and 5:00 pm on Saturdays, except in case of urgent necessity in the interest of public health and safety, and then only with a permit from the building inspector (Municipal Code of Ordinances, Chapter 18, City of Fontana). When work is performed during these hours, predicted vibration levels are considered as an acceptable intrusion of the ambient noise within the project area. In addition, the City of Fontana's Development code (Article VII – Industrial Zoning Districts, Division 6 – Performance Standards, Noise and Vibration) specifies that "no person shall create or cause to be created any activity which causes a vibration which can be felt beyond the property line of any residentially zoned property with or without the aid of an instrument" (Municipal Code of Ordinances, Chapter 18, City of Fontana). Therefore, unless the vibration results in physical damage to local structures, it does not constitute a significant impact.

Future construction activities would be assessed in conjunction with the City's routine review of site-specific geotechnical studies and the recommended grading and foundation design measures. For projects subject to review under CEQA, measures to mitigate potentially significant vibration impacts must be considered in the project planning process, prior to project approvals. By complying with the City Noise Ordinance, California Building Code standards, and applicable regulations, potential vibration impacts from future development would be less than significant.

Would the Project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the Project?

Increases in traffic could result in permanent increases in ambient noise levels, e.g., where a roadway segment is proposed to be expanded with additional travel lanes over the long-term to achieve level of service standards. Roadway noise could also increase on an existing roadway that will carry increasing traffic volumes. In either scenario, roadway noise levels could increase to beyond the levels considered acceptable for the adjacent land uses.

The City' s noise ordinance contains standards for mobile noise sources and outdoor and indoor noise limits for residential uses, places of worship, educational facilities, hospitals, hotels/motels, and commercial and other land uses. The noise standard for exterior living areas is 65 dBA CNEL. The indoor noise standard is 45 dBA CNEL, which is consistent with the State of California Interior and Exterior Noise Standards. As well, the City's ordinance specific to industrial zoning districts (Sec. 30-239 - Land use compatibility) specifies development policies to minimize noise levels, such as consideration of physical barriers, building orientation, and infill development (City of Fontana).

Continued enforcement of these policies and standards would reduce potential permanent ambient noise impacts. Each future project would be evaluated on a case-by-case basis pursuant to CEQA, and appropriate noise thresholds established. In the event significant impacts are anticipated, appropriate mitigation would be developed at that time. In addition, the General Plan Update's Noise and Safety Element contains several goals, policies, and actions to

minimize noise impacts to people and the environment in the vicinity of sources of noise as illustrated above.

Would the Project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the Project?

The General Plan Update provides a development framework for development of projects at numerous locations throughout the City of Fontana, such as those zoned for residential, commercial, industrial or mixed-use areas. Temporary increases in noise levels near active construction sites could adversely affect neighboring land uses, particularly where sensitive receptors are located.

Construction equipment (e.g., earthmoving and materials handling equipment and vehicles) would generate noise during clearing, excavation, grading, structure, roadway, and utility construction operations associated with the development under the General Plan Update. However, it is anticipated that any increase in noise due to construction traffic would be temporary (i.e., would no longer occur once build-out of the project area is complete). Furthermore, all construction noise would be restricted by City ordinance to 7:00 am to 6:00 pm on weekdays. Therefore, temporary noise impacts associated with construction-related activities would be less than significant.

Future construction projects within the City will also be subject to the measures outlined in the City of Fontana Municipal Code of Ordinances (Chapter 18) and assessed in conjunction with the City's review of site-specific noise impact analyses. Noise levels at sensitive receptors would be analyzed on a case-by-case basis and appropriate mitigation applied to restrict noise levels to acceptable levels. In the event significant impacts are anticipated, appropriate mitigation would be developed at that time. In addition, the General Plan Update's Noise and Safety Element contains several goals, policies, and actions to minimize noise impacts to people and the environment in the vicinity of sources of noise as illustrated above.

Would the Project expose people residing or working in the project area to excessive noise levels (for projects 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; or for projects located within the vicinity of a private airstrip)?

As noted above, portions of the City of Fontana are located within the LA/Ontario International Airport flight path. Airplane traffic to and from the airport is audible within portions of the city, specifically Santa Ana Avenue. The noise contour map for the forecasted 2020 conditions, associated with the LA/Ontario Airport, shows the 65 dB contour extending outside the boundary of the western edge of Fontana. Refer to Figure 5.10-1 However, the planned use specified in the General Plan Update for the LA/Ontario area is industrial, which is not considered a sensitive land use for the 65 dB airport noise zone.

Furthermore, the *LA/Ontario International Airport Land Use Compatibility Plan* adopted in 2011 concluded that: "There were no areas identified [within Fontana] as having a residential land use designation within the noise impact zones. Therefore, there is no potential for displacement of future residential development…. the land uses that fall within the noise impact zone are industrial land uses" (City of Ontario 2011).

In accordance with "Goal 1" of the General Plan Update Noise and Safety Element ("The City of Fontana Protects its sensitive land uses from excessive noise through diligent planning through 2035"), no changes will occur to land uses in areas that are susceptible to a 65 dBA CNEL or greater. This includes preventing new residents or workers from being exposed to excessive noise levels associated with air traffic (Ontario International Airport). Therefore, impacts associated with aircraft noise would be less than significant.

5.10.4 Mitigation Measures

While no significant noise impacts have been identified that require mitigation to less than significant levels, the following mitigation measures are considered as best practices to be applied to future projects, as necessary, to reduce impacts to less than significant levels. The following list of mitigation measures is not all inclusive of mitigation measures that may be adopted for future projects but serve as a guide and performance standards that constitute the minimum level of measures to reduce environmental impacts to acceptable levels.

MM-NOI-1 Prior to issuance of a grading permit, a developer shall contract for a site-specific noise study for the parcel. The noise study shall be performed by an acoustic consultant experienced in such studies and the consultant's qualifications and methodology to be used in the study must be presented to City staff for consideration. The site-specific acoustic study shall specifically identify potential noise impacts upon any proposed sensitive uses (addressing General Plan buildout conditions), as well as potential project impacts upon off-site sensitive uses due to construction, stationary and mobile noise sources. Mitigation for mobile noise impacts, where identified as significant, shall consider facility siting and truck routes such that project-related truck traffic utilizes existing established truck routes. Mitigation shall be required if noise levels exceed 65 dBA, as identified in Section 30-182 of the City's Municipal Code.

MM-NOI-2 To reduce impacts related to heavy construction equipment moving and operating on site during project construction, grading, demolition, and paving prior to issuance of grading permits, the applicant shall ensure that the following procedures are followed:

- Construction equipment, fixed or mobile, shall be properly outfitted and maintained with feasible noise-reduction devices to minimize construction generated noise.
- Laydown and construction vehicle staging areas shall be located away from noise sensitive land uses if feasible.

- Stationary noise sources such as generators shall be located away from noise sensitive land uses, if feasible.
- Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow surrounding property owners to contact the job superintendent 24 hours a day to report noise and other nuisance-related issues, if necessary. The point of contact shall be available 24 hours a day, 7 days a week and have authority to commit additional assets to control dust after hours, on weekends, and on holidays. In the event that the City of Fontana receives a pattern of noise complaints, appropriate corrective actions shall be implemented, such as on- site noise monitoring during construction activities, and a report of the action shall be provided to the reporting party.

5.10.5 References

City of Fontana. 2017. City of Fontana Municipal Code of Ordinances. Online content updated on October 25, 2017 (Supplement 42). Accessed on February 26, 2018: https://library.municode.com/ca/fontana.

City of Ontario. 2011. City of Ontario LA/Ontario International Airport Land Use Compatibility Plan, 2011. Accessed on March 1, 2018: http://www.ontarioplan.org/alucp-for-ontario-international-airport/

City of Fontana, 2016. Fontana General Plan Update Background Report, 2016. Prepared by Stantec Consulting Services, Inc. for the City of Fontana, California. April.

5.11 POPULATION & HOUSING

This section evaluates the potential impacts to population and housing associated with implementation of the General Plan Update. The City of Fontana Housing Element for the 2014-2021 period was adopted in 2014 and subject to its own *California Environmental Quality Act* (CEQA) review at that time, and in 2014 was certified by the State Department of Housing and Community Development (HCD). The Housing Element strategies, principles, goals, and policies are part of the regulatory framework under which the impacts of the General Plan Update are being analyzed, but those strategies, principles, goals, and policies are not being analyzed as part of this environmental impact report (EIR). Instead, the focus of the analysis is on the extent to which the General Plan Update Goals, Policies, and Actions affect population and housing within the context of CEQA. The Housing Element will be updated in 2021 as required by California Law and will undergo a separate CEQA review and certification by HCD and every five years thereafter over the course of the General Plan Update planning period from 2015 to 2035.

5.11.1 Existing Conditions

5.11.1.1 Population

Fontana's population is estimated at approximately 213,000 people (estimated as of 2016). The Southern California Associated Governments (SCAG) forecast Fontana's population to increase to approximately 280,000 by 2040 in approximately 74,000 households. This projection represents an increase to Fontana's current population by 67,000 people.

5.11.1.2 Housing

According to the California Department of Finance, as of January 1, 2015, there were the 52,969 housing units in Fontana, of which 94.8% were occupied and 5.2% were vacant. Vacancy rates are an indicator of housing supply and housing demand. Low vacancy rates produce greater upward price pressures and suggest households may have trouble finding housing with an affordable monthly payment. A higher vacancy rate indicates downward price pressure and may suggest an oversupply of housing units. A four to five percent vacancy rate is considered "healthy."

Expanding on the infill potential for housing, the General Plan Update outlines vacant or underutilized parcels in the Downtown area which provide opportunities for infill development including housing. Corner parking lots, small- and large-scale infill on lots of varying sizes, incorporation of mixed-use buildings that include residential units, and variety in styles of for-rent, ownership, market rate or affordable housing units, and adaptable spaces such as live-work units.

5.11.2 Project Impacts

5.11.2.1 Thresholds of Significance

A project can be considered to have a potentially significant impact on population and housing if the project will:

A. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

B. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

C. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

5.11.2.2 Impacts

A. The General Plan Update will not induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

Population growth is complex and caused by the interplay of myriad factors, including immigration, employment and economic opportunities, births, deaths, and other influences. Induced population growth may result in impacts if a project induces growth in an area not otherwise planned for growth, or in an area that cannot adequately accommodate such growth. Growth may be induced directly by proposing new residential uses, or indirectly, by proposing new roadways, other infrastructure or employment opportunities.

Implementation of the General Plan Update could result in an additional 23,492 households and an additional 40,599 employees within the planning area. The focus for growth in the General Plan Update is in the Downtown Core of the City and "Livable Corridors" as described in Chapter 14 - Downtown Area Plan. These Livable Corridors are envisioned for Sierra Avenue from Baseline to I-10, Foothill Blvd through the entire City, and Valley Boulevard for several blocks east and west of Sierra Boulevard. The two corresponding zoning categories for these corridors are Walkable-Mixed Use, or "WMXU." WMXU-1 allows residential densities ranging from 24 to 39 dwelling units (du) per acre and non-residential uses have a maximum Floor Area Ratio of 2.0. WMXU-2 with residential densities range from 12 to 24 du per acre, and non-residential uses up to an Floor Area Ratio (FAR) of 1.0.

The General Plan Update would not designate formerly undeveloped lands needing major infrastructure expansions (e.g., water, sewer, wastewater) for development. Instead, the General Plan Update has been developed to: 1) accommodate anticipated growth in existing

developed areas that are adequately served by infrastructure, 2) revive underutilized parcels and uses, and 3) preserve and enhance residential opportunities and options within the City.

Due to the focused nature of the General Plan Update on the Downtown Core and Livable Corridors and the fact that no infrastructure improvements are proposed for the areas where new residential development would occur, the General Plan Update is predicted to accommodate anticipated population growth within the City in an orderly manner. The Housing Element establishes an overall development capacity for the City and serves as a policy guide for determining the appropriate physical development and character of the City. In addition, the following goals and policies related to population and housing in the General Plan Update were developed to be consistent with and complement the strategies, principles, goals, and policies contained in the 2014 – 2021 Housing Element. Therefore, potential impacts would be less than significant.

Table 5.11-1 Goals and Policies Related to Population and Housing

Goals & Policies	Action
Chapter 13 Economy, Education, and Workforce Development	
Goal 3: Plan Fontana as a "complete community" with a balance of diverse neighborhoods, amenities, services, and infrastructure that supports a qualified workforce and attracts business.	
• Strengthen community institutions and development patterns that provide a high quality of life and that correspond to the values of the millennial generation—the majority of workers starting in 2016.	C. Provide a balance of affordable and market-rate housing options for all stages of life.
Goal 4: Revitalize Fontana's downtown and the Sierra Avenue corridor to provide an attractive area for new businesses to locate and create a lively center of government, education, medical care, arts, culture and entertainment, restaurants, and new housing.	
• Promote initiatives to attract housing in and around downtown for households of all types as a way to support new retail, restaurant, and entertainment options in downtown.	G. Provide housing options for households across the life cycle in the downtown area. H. Implement the Livable Corridor frameworks for Sierra Avenue, Valley Boulevard, and Foothill Boulevard to support downtown revitalization.

Table 5.11-1 Goals and Policies Related to Population and Housing

Goals & Policies	Action
Chapter 14 Downtown Area Plan	
Goal 3: Provide housing for a broad range of household sizes, types and incomes within and adjacent to downtown to help support the health and growth of the downtown economy.	
• Encourage mixed-use development within downtown and along major corridors. • Encourage new medium- density housing on vacant and underutilized parcels within the neighborhoods of the downtown area. • Ensure that new infill development is compatible in scale and character with the existing neighborhoods. • Ensure that transportation and utility infrastructure keeps pace with infill development so that the neighborhood character and quality steadily improves over time. • Encourage new "in-town" housing types targeted to young people and young families to help attract and retain the next generation of Fontanans.	A. Update zoning along downtown corridors to allow a full spectrum of market-driven development types where building form, location, and frontage is regulated—rather than building use—to generate active and attractive downtown corridors that accommodate a range of uses, services, and activities. B. Where possible and practical, subdivide large blocks to provide additional connectivity between corridors and adjacent neighborhoods, as well as unlock new development potential on underutilized land in and around downtown. C. New infill development should be located close to the street/sidewalk, contributing to a consistent urban pattern along the corridors. Unlike the downtown core, where a continuous "street wall" is desired, buildings along the corridors will more typically have spaces between them, with parking organized behind and/or beside them. D Balance the goal of street fronting infill development along the corridors with the need for additional privacy for residential units due to the higher traffic volumes and speeds along the corridors. While direct visitor access from the street/sidewalk should be required, residential units can be arranged around semi-private courts, open spaces (that could be secured with gates), and dooryards—or through internal access via an entry lobby—that open(s) to the street/sidewalk.
Goal 4: Reinvigorate the Foothill and Sierra corridors with a mix of retail, employment, mixed-use and housing development as an economic engine for the downtown area, and as gateways to downtown.	
• In addition to high-quality commercial development, encourage housing in appropriate forms along these corridors [Foothill and Arrow Boulevards and Sierra Avenue].	A. Incentivize quality new corridor-fronting infill development (housing and commercial) in vacant and underutilized parcels along Sierra Avenue.

Table 5.11-1 Goals and Policies Related to Population and Housing

Goals & Policies	Action
Goal 6: The area along Sierra Avenue and Merrill Street will become a College District, with a mix of housing and employment surrounding and supporting the growing Chaffey Community College campus.	
• Encourage higher-density housing on appropriate sites that is targeted to student, faculty and staff.	A. Prioritize bicycle parking, car-sharing and bike-sharing services, sheltered bus stops, widened sidewalks, and mid-block pedestrian crossings in the segments from Chaffey Community College to downtown, in support of increased student/pedestrian activity..
Chapter 15 Land Use, Zoning, and Urban Design	
Goal 1: Use the Strategic Policy Map and the Future Land Use Map to guide land use decision making.	
• Review citywide land use strategies when considering changes in the land use map. • Keep zoning and other regulations up to date and consistent with the Future Land Use Map.	E. East of Sierra, designate areas on Foothill Boulevard for multifamily development, and change existing commercial areas from C-G to C-C. F. Designate more areas along the Pacific Electric Trail for multifamily housing for "eyes on the trail." G. Designate most of the Sierra corridor from Foothill Blvd to Miller Avenue for multifamily development.
Goal 2: Fontana development patterns support a high quality of life and economic prosperity.	
• Preserve and enhance stable residential neighborhoods. • Locate multifamily development in mixed-use centers, preferably where there is nearby access to retail, services, and public transportation. • Promote interconnected neighborhoods with appropriate transitions between lower-intensity and higher-intensity land uses.	A. Preserve, protect, and connect existing master-planned neighborhoods. C. Create "Connected Neighborhood" planning districts that link established master planned neighborhoods to each other and to nearby school, park, and shopping destinations with walking and biking routes. D. Encourage Livable Corridor design: more walkable neighborhoods with higher density housing and a mixed- use development on larger infill sites along corridors such as Foothill, Sierra, Valley, Baseline, Citrus and others, connecting them to adjoining neighborhoods.
Goal 4: Compact, walkable, mixed-use centers occupy key locations along corridors to be served by Transit in the future and at intersections where neighborhood retail and diverse housing options can succeed.	
• Promote a land use pattern that provides connections among land uses and a mixture of land uses.	B. Coordinate the location of new and expanding neighborhood centers with active transportation and transit planning to enable concentrations of new jobs and housing near transit stops.

Table 5.11-1 Goals and Policies Related to Population and Housing

Goals & Policies	Action
	D. Encourage the development of a variety of housing types within the walkable mixed-use corridor. I. Encourage development of Foothill Boulevard as a Livable Corridor of walkable mixed-use development and higher-density housing within walking distance of Bus Rapid Transit stops. K. Encourage the development of walkable mixed-use centers and new higher-intensity neighborhood edges that connect existing neighborhoods to Foothill Boulevard.
Goal 7: Public and private development meets high design standards.	
• Support high-quality development in design standards and in land use decisions.	C. Design new housing in walkable neighborhoods that are connected to adjoining neighborhoods. D. Design new neighborhoods by integrating them into existing street grids.

B. The General Plan Update will not displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

The General Plan Update would not result in the direct displacement or demolition of residential structures because it does not authorize specific construction projects, development plans, or other land-altering activity. The General Plan Update could result in indirect impacts by establishing land use policies that provide incentives for private redevelopment initiatives in the Downtown Core and Livable Corridors. The Downtown Area Plan designates land for the development of high-density transit-oriented housing that accommodates and encourages development of housing under the State Housing Element Law. As such, there would be no significant impact related to the reduction of substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

C. The General Plan Update will not displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

The General Plan Update would not result in any direct displacement of substantial numbers of people because it does not authorize any construction or redevelopment activity that would displace people. The General Plan Update designates the Downtown Core and Livable Corridors as land for the development of transit oriented, high-density housing that accommodates and encourages development of housing for low-income persons. As such, there would be no significant impact related to the reduction of substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

5.11.2.3 Mitigation Measures

No significant impacts are anticipated. Therefore, mitigation measures are not required.

5.11.3 References

City of Fontana Community Development Department. General Plan Annual Progress Report. February 2017. Accessed March 19, 2018 www.fontana.org

5.12 PUBLIC SERVICES, UTILITIES, & RECREATION

This section discusses potential impact of the General Plan Update on police, fire, water, wastewater, storm drains, solid waste, schools, libraries, and parks & recreation. While the General Plan anticipates an increase in population and therefore the potential for increased demand on these services, the City of Fontana does not directly control water, wastewater, solid waste, or schools. For these items, the Lead Agencies are the Water Company or School District for example, which have their own independent forecasting, demand and impact analysis procedures and requirements. For the services and amenities the City does control, although the demand may increase, the potential impacts of new or expanded infrastructure is largely speculative until precise locations and project descriptions are known. Adoption of the General Plan Update would not directly create the need for additional facilities because it does not create population growth or authorize specific development project(s) or construction activities. Therefore, this section analyzes the impacts of the General Plan Update Goals, Policies, and Actions, and not necessarily potential physical environmental impacts of new potential future facilities.

5.12.1 Police

5.12.1.1 Existing Conditions

Fontana was listed as one of the 20 safest cities in the country in 2013. The Fontana Police Department (FPD) has 188 sworn officers[1] and operates out of one centrally located police station located at 8353 Sierra Ave. In total, the FPD (2017/2018) has 292 FTE positions budgeted, and 18 part-time positions. The City of Fontana standard for police protection prescribes a ratio of 1.4 sworn police officers per 1,000 residents.

The Fontana Police Department headquarters is located at 17005 Upland Avenue. They also operate the Southridge Contact Station at 11500 Live Oak Avenue. There is an additional contact station located within the Palm Court Shopping Center, at 17122 Slover Avenue. The stations are used by officers for reporting, but neither is staffed."[2]

The San Bernardino County Sheriff's Department also operates a station in the City of Fontana located at 17780 Arrow Blvd. This station is a combination of the West End patrol station and the Fontana stations, and houses twenty-seven deputy positions, five detectives, seven sergeants, one lieutenant and one captain. It serves a 300-square mile patrol area across Fontana, Bloomington, Rialto, and Lytle Creek, and interfaces with LA, Orange and Riverside Counties to include unincorporated Upland, Montclair, Ontario and Chino, San Antonio Heights and the Mt. Baldy wilderness. The major collateral responsibilities of the Fontana Station is the Auto Club Speedway which requires a significant amount of Sheriff manpower for a period of four days surrounding race events.[3] The Fontana Police Department also has a close working relationship

[1] City of Fontana Police Department website 2018
[2] Westgate Specific Plan Final EIR September 2015
[3] City of Fontana 2017 Local Hazard Mitigation Plan

with the surrounding agencies of Rialto Police, Rancho Cucamonga Police, and Riverside Sheriff.[4]

5.12.1.2 Thresholds of Significance

The General Plan Update may have a significant impact if it would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services.

5.12.1.3 Impacts

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services?

The General Plan includes a number of policies and actions in support of the goal of keeping the crime rate below state and County rates. These are listed in Table 5.12-1.

Table 5.12-1 2015-2035 General Plan Public Safety Goals, Policies and Actions

Goal	Policy and/or Action
Goal 1: Fontana's crime rate continues to be below state and county rates.	**POLICIES** • Continue the Police Department's successful community policing programs. • Provide appropriate security for new amenities, such as trails and parks. • Support Police Department needs for staff and technology to keep up with population growth and contemporary policing methods. • Promote and enhance use of anti-crime design strategies and programs. **ACTIONS** A. Prepare a strategic plan for the police department. Develop a strategic plan with updates every five years thereafter. A long-term strategic planning process will integrate staff, training, facilities and equipment needs into the City's overall planning process.

[4] San Bernardino County Sheriff http://cms.sbcounty.gov/sheriff/PatrolStations/Fontana.aspx

Table 5.12-1 2015-2035 General Plan Public Safety Goals, Policies and Actions

Goal	Policy and/or Action
	B. Continue community policing and special programs and expand police community presence on the street and in neighborhoods as the population grows. C. Monitor changing conditions—for example, implementation of the Downtown Area Plan or transit-oriented development along Foothill Boulevard, and work with other City staff to serve these areas as they change. D. Continue to review the design of new development for Crime Prevention Through Environmental Design (CPTED) principles. E. Provide CPTED reviews of new development in a district or neighborhood context rather than simply a project context, so that design strategies to increase connections, "eyes on the street," mixed-use vitality, and so on, are valued as creating conditions that reduce crime.

These goals, policies and actions are a continuation of existing programs and efforts, except for preparation of a Strategic Plan.

New or Altered Facilities Required to Maintain Acceptable Service Ratios

The 2015/2016 Annual Report, FPD indicates that the actual ratio of officers to population has fluctuated since 2009 from a high of approximately 1.01 to a low of 0.93 in 2011. In 2014 that ratio was 0.94 FTE/per 1,000. During this time, 2012, the City of Fontana was ranked one of the top 20 safest cities in the Country. Therefore, the officer-to-population ratio is just one criterion used to determine the number of officers necessary to meet City public safety needs.

The need for additional police will be incremental as the population increases. The General Plan Update addresses the incremental need through adoption of a policy for a long-term strategic planning process for Police services to occur every 5 years. This plan will integrate staff, training, facilities and equipment needs into the City's overall planning process. Implementation of the policies, such as the FPDs ability to track and plan for the needs as the population grows - and its continuous monitoring of changing conditions, while working with other City staff to serve the areas where development would be focused as needs change. Individual law enforcement projects in the City would be reviewed to determine safety requirements applicable to each development and to ensure compliance with these requirements. This would ensure that new developments would not reduce the staffing, response times, or existing service levels within the City. The City collects Development Impact Fees for Police services with all new developments. These fees help offset the cost of providing police services on a project by project basis.

An analysis of the impacts associated with development of new police facilities or expansion of existing facilities is too speculative because the potential facility's size, design, and location are not known. If a police protection facility is to be expanded or constructed, the police facility

would be subject to a development and environmental review process according to City and CEQA guidelines. That process would identify potential impacts (such as potential short-term construction impacts) and whether mitigation was required to reduce impacts to a less than significant level. Therefore, the General Plan Update goals, policies, and actions related to police protection and functions are considered to be less than significant.

5.12.1.4 Mitigation Measures

No further mitigation measures are required beyond compliance with the proposed General Plan Update Policies and Actions. No mitigation measures are required that would further reduce the identified less than significant impacts.

5.12.2 Fire

5.12.2.1 Existing Conditions

Created in 2008, the Fontana Fire Protection District (FFPD) provides emergency, preventive, and administrative services across 52.4 square miles within the city limits and the SOI through a contract with the San Bernardino County Fire Department. There are seven fire stations, an administrative office, and a fire prevention office serving the City.

Both the District's administrative offices and the fire prevention offices are located at City Hall, 8353 Sierra Avenue. The District is staffed with 119 full time personnel, 108 safety employees, and 11 non-safety. Emergency response, administrative and support services are provided through a contract under the umbrella of the San Bernardino County Fire Department.[5] The City also has automatic and mutual aid agreements with nearby agencies including the Rancho Cucamonga Fire Protection District.[6]

The FFPD's 2013 Strategic Plan identified 9 action items for improving fire operations and for achieving their goals and objectives. These included reorganizing some of their existing resources and construction or remodel of existing facilities. Some of these specific projects projected through the year 2022 included construction of a co-located City/County OES, centrally located training facility, new headquarters, relocating station 77, and constructing a new station in the western sphere of influence (Fire Station 80). Already, the district's administrative officers have moved to the City Hall Campus, Station 73 has been relocated to Banana Avenue, South of Foothill Blvd., and a City/County OES has been constructed at the City Hall campus.

The Insurance Services Office (ISO) provides ratings for each Fire District in the nation. These ratings affect the fire insurance rates in a particular area. FFPD's rating as of 2015 was a Class 2 out of 10, with 1 being the best. The FFPD's goal is to achieve a Class 1 rating.

[5] Fire Protection District Fiscal Year 2015-2016 Summary
[6] Westgate Specific Plan Final EIR

5.12.2.2 Thresholds of Significance

A project is considered to have a significant effect if the project would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services.

5.12.2.3 Impacts

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services?

The General Plan Update includes a number of goals, policies and actions for fire protection services through 2035 as shown in Table 5.12-2. These do not include specific facilities remodel, relocation, or new construction projects found in the FFPD 2013 Strategic Plan.

Table 5.12-2 2015-2035 General Plan Fire Protection Goals, Policies and Actions

Goal	Policy and/or Action
Overall Goal: Ensure continuing fire protection as the population grows and natural fire events may increase in number or intensity due to changing climate conditions.	
Goal 2: Fontana's Fire Department meets or exceeds state and national benchmarks for protection and responsiveness.	**POLICY** • Continue the City's successful partnership with the San Bernardino County Fire Department. **ACTIONS** A. Ensure continuing fire protection as the city's population grows and natural fire events may increase in number or intensity due to changing climate. B. Monitor population growth and development to ensure continuing protection through sufficient stations, equipment, training, and resources. C. Continue to provide public education about risks from fire, hazardous materials, and other hazards.
Noise & Safety Element Goal: Threats to public and private property from urban and wildland fire hazards are reduced in the City of Fontana.	• The City shall require residential, commercial, and industrial structures to implement fire hazard-reducing designs and features. • The City shall ensure to the extent possible that fire services, such as fire equipment, infrastructure, and response times are adequate for all sections of the city. • The potential for hazardous contamination is reduced in the City of Fontana.

Table 5.12-2 2015-2035 General Plan Fire Protection Goals, Policies and Actions

Goal	Policy and/or Action
	• The City shall strive to reduce the potential for residents, workers, and visitors to Fontana from being exposed to hazardous materials and wastes. • The City maintains regulations, plans, protocols and emergency training to reduce hazards and risks, and meet State and Federal requirements for emergency assistance. • The City shall keep hazard mitigation and emergency services programs up to date. • The City shall continue to provide hazard and risk mitigation and emergency training to public employees and the public at large.
Stewardship and Implementation Goal 4: Seismic injury and loss of life, property damage, and other impacts caused by seismic shaking, fault rupture, ground failure, earthquake-induced landslides, and other earthquake-induced ground deformation are minimized in the city of Fontana.	A. The City shall continue to ensure to the fullest extent possible that in the event of a major disaster dependent care and high-occupancy facilities will remain safe. B. The City shall ensure that all residents and business owners in the City have access to information regarding seismic hazards.
Goal 7: Threats to public and private property from urban and wildland fire hazards are reduced in Fontana.	**POLICIES** • The City shall continue to require residential, commercial, and industrial structures to implement fire hazard-reducing designs and features. • The City shall continue to ensure to the extent possible that fire services, such as fire equipment, infrastructure, and response times, are adequate for all sections of the city. • The City shall monitor development or redevelopment in areas where fire zones have been mapped through the city. **ACTIONS** A. The City shall require all new development in areas with a high fire hazard to provide fire-retardant landscaping and project design to reduce their fire hazard, and the City shall take measures to reduce the risk of fire at the Wildland/Urban Interface. B. The City will continue to support the wildland fire expertise provided by the San Bernardino County Fire Department in the Fontana Fire District.
Goal 8: The potential for hazardous contamination is reduced in the City of Fontana.	**POLICY** • The City shall strive to reduce the potential for residents, workers, and visitors to Fontana being exposed to hazardous materials and wastes. **ACTION** A. The City will continue to support the siting of one of San Bernardino County's two Hazardous Materials Response Teams in Fontana.

Table 5.12-2 2015-2035 General Plan Fire Protection Goals, Policies and Actions

Goal	Policy and/or Action
Goal 9: The City maintains regulations, plans, protocols and emergency training to reduce hazards and risks and to meet state and federal requirements for emergency assistance.	**POLICIES** • Keep hazard mitigation and emergency services programs up to date. • Continue to provide hazard and risk mitigation and emergency training to public employees and the public at large. **ACTIONS** A. Update the local Hazard Mitigation Plan as required to meet FEMA requirements. B. Explore the opportunity to create Business Emergency Response Training in cooperation with the Fire District.

New or Altered Facilities Required to Maintain Acceptable Service Ratios

The precise location, size and details of future fire stations are unknown at this time and too speculative to include in this analysis. However, potential impacts of new and expanded fire protection facilities will be analyzed on a project-specific bases through the City's development review process as required by the zoning ordinance. In addition, future proposed project(s) will have an accompanying environmental analysis as required by CEQA to disclose any potential significant impacts and identify mitigation measures necessary to reduce significant impacts.

Buildout of the General Plan would occur over two decades. Thus, any increase in demand for fire protection services would occur gradually as additional development and associated population growth is added to the City. The areas designated for development in the General Plan Update are already within the service area of the Fontana Fire Protection District which covers the City limits and the SOI. To accommodate this growth, and as anticipated in the 2013 FFPD Strategic Plan, new facilities are anticipated as previously discussed. The Fontana Fire Protection District collects development mitigation fees for fire facilities which would be available to fund additional fire protection facilities as needed.

The General Plan Update also states that, "The City shall continue to ensure to the extent possible that fire services, such as fire equipment, infrastructure, and response times, are adequate for all sections of the city" (General Plan Fire Protection Goals, Policies and Actions, Goal 7). This would ensure that any new developments would not reduce the staffing, response times, or service levels within the City. Therefore, the General Plan Update is not anticipated to have a significant impact to Fire Protection.

5.12.2.4 Mitigation Measures

No mitigation measures are required that would further reduce the identified less than significant impacts.

5.12.3 Water

5.12.3.1 Existing Conditions

Drinking water supply

The City of Fontana does not directly control its drinking-water supply. Water is provided to the City and its SOI primarily by three agencies: The Fontana Water Company (FWC), Cucamonga County Water District (CVWD) and the West San Bernardino County Water District (WSBCWD). Two other water agencies, the Crawford Canyon Water District, and the Marygold Mutual Water Company, provide water for small portions of the northern and eastern parts of Fontana. These agencies draw on both local sources and water imported from Northern California. Imported water serves Fontana through two regional water wholesalers, the Inland Empire Utilities Agency (IEUA) and the San Bernardino Valley Municipal Water District (Valley District).

- Cucamonga Valley Water District (CVWD) serves the northwest portion of Fontana adjacent to the City of Rancho Cucamonga. CVWD's drinking water comes from two primary sources: 20 local groundwater wells in the Chino Groundwater Basin and the Cucamonga Basin and imported water. A small amount of water also flows from local canyons and tunnels.
- The former West San Bernardino County Water District, now the West Valley Water District (WVWD), services the northeast portion of the City of Fontana and the northern Fontana Sphere of Influence as well as other cities and unincorporated areas.
- The Crawford Canyon Mutual Water Company services a small portion of undeveloped land at the northern Fontana Sphere of Influence boundary. The company has 12 miles of pipelines and currently only serves agricultural water and backup water for fire.
- The Marygold Mutual Water Company services a small portion of the western City of Fontana boundary and the unincorporated area of Bloomington (Marygold Acres). There is a small overlap of services with the Fontana Water Company.

Fontana Water Company provides water to the majority of the City and its SOI, covering approximately 52 square miles with 38 wells, 17 storage reservoirs, and 3.5 million feet of water-distribution mains ranging up to 36-inches in diameter. The water supply is produced from Lytle Creek surface flow, and from groundwater wells in the Lytle Basin, Rialto Basin, Chino Basin, and another groundwater basin known as "No Man's Land."

A portion of the water supply is purchased from Cucamonga Valley Water District. Water from the State Water Project is purchased from the Inland Empire Utilities Agency and San Bernardino Valley Municipal Water District.

In 2016, the Fontana Water Company reported that the sources of water provided to their customers was approximately 74% groundwater, 4% local surface water, and 22% from the State Water Project. Groundwater is extracted from the Chino, Rialto, and Lytle Basins along with an

unnamed basin. Local surface water and State Water Project water is treated at the Sandhill Water Treatment Plant.[7]

Urban Water Management Plan (UWMP)

In 2017 the Fontana Water Company's Urban Water Management Plan (UWMP) was updated to address drought conditions. A full discussion of the water system, usage, water supply, water system reliability, shortage contingency plan, demand management measures, historic and projected future water uses is contained in the UWMP.

The Fontana Water Company's UWMP includes data regarding water demand in the City. Since the FWC provides water to most of the City, these numbers are considered representative of the demand in the City and SOI overall for the purposes of this document. The table below shows the actual water delivered by FWC in 2015. The UWMP indicated the delivery was to 45,045 customers (active metered connection).

Table 5.12-3 Fontana Water Company Retail Demands for Potable and Raw Water

Use Type	2015 Actual	
	Additional Description	**Volume[1]**
Single Family		17,754
Multi-Family	Multi-family residential, duplex, individually metered, public authority multi-family	3,438
Institutional/Government	Public authority	2,918
Other	Commercial/industrial	6,455
Other	construction, unbilled/unmetered, fire hydrants	1,065
Sales/Transfer/Exchange to other agencies	CVWD Intake – Summit, CVWD intake -Cherry, delivered to FUWC irrigation customers	59
Losses		2,695
Other	Delivered to Cemex (Raw water)	580
	Total	**34,964**

NOTE:
[1] Volume in Acre Feet (AF)

SOURCE: Adapted from Fontana Water Company Urban Water Management Plan 2015 (Amended December 2017).

In 2015, the residential water use accounted for 21,192 AF, or 60%, and commercial and industrial use accounted for 6455AF, or about 18% of the water demand in the FWC service area. The UWMP also projects future water use in the service area and identifies sources of water.

[7] FWC 2016 Consumer Confidence Report

Groundwater Recharge

Groundwater depends on recharging the aquifer with water that seeps into the ground from rain and snowmelt. The impervious surfaces that come with development, such as roofs, streets, and parking lots, can keep water from reaching the aquifer. Artificial groundwater recharge is increasingly used where natural sources are insufficient. Fontana's groundwater supplies come in part from Chino Basin, which encompasses 235 square miles, 80% of which is in San Bernardino County. Groundwater is also extracted from the Rialto and Lytle Basins along with an unnamed basin.

Several agencies, including the IEUA, sponsor the Chino Basin Recycled Water Groundwater Recharge Program, a network of pipelines that direct stormwater runoff, imported water from the State Water Project, and IEUA-recycled water to 16 recharge sites. Most of these are basins designed to hold the water and allow it to percolate into the ground. This program helps ensure the availability of local groundwater supplies and has become a nationally acclaimed, award-winning program because it relies on local resources, natural organic cycles, innovative treatment techniques and energy-saving methods.

Recycled Water

The Inland Empire Utilities Agency (IEUA) is in the process of building a regional recycled water system to serve the Westgate Specific Plan and other areas in Fontana.[8] Use of recycled water is one of the goals for water use in the UWMP and in the General Plan Update.

During FY 2016/2017, the average recycled water supply from IEUA was approximately 47.8 million gallons per day or 53,480 acre-feet per year (AFY). Recycled water is also being used in the IEUAs groundwater recharge program through the Chino Basin Recycled Water Groundwater Recharge Program. Recycled water direct usage was 19,477AFY and recharge usage was 13,934AFY.[9]

Water Conservation

Southern California is one six-county region when it comes to water. The Metropolitan Water District (MWD) imports about half of the region's overall supply from the Colorado River and Northern California and holds water in storage in case of drought. When MWD must limit supplies during an extraordinary drought cycle, local mandatory conservation becomes the norm. The district created a Water Supply Allocation Plan to approach drought in a regional and fair manner designed to minimize impacts. The governor called for a 25% reduction in urban water use starting in June 2015, which California communities have been meeting and exceeding.

[8] Westgate Specific Plan Final EIR 2017
[9] IEUA 2017 Annual Report

Also, as a result of the ongoing drought cycle, the State Water Board imposed the following water-use restrictions for everyone:

- No runoff allowed onto driveways, sidewalks, etc. when irrigating landscapes with potable water.
- Hoses must have an automatic shutoff nozzle to wash cars and other vehicles.
- Residents must not use potable water to wash down driveways and sidewalks.
- Residents must not use potable water in decorative fountains that do not recirculate.
- No outdoor watering during and within 48 hours following measurable rainfall.
- Restaurants are not to serve water to customers unless the customer requests it.
- Hotels/motels must ask guests to re-use towels and linens.
- Homeowners must fix leaks within 72 hours after being notified.
- Potable water cannot be used to irrigate ornamental turf on public street medians.
- Potable water cannot be used for outside landscapes of new homes and buildings unless the irrigation system complies with outdoor irrigation efficiency standards adopted by the State's Building Standards Commission.

The Santa Ana Watershed Project and One Water One Watershed Plan

The City of Fontana is located in the Santa Ana River Watershed over which a regional planning effort known as the One Water One Watershed Plan occurs. Included in the General Plan water and wastewater goals and policies are support and participating in the OWOW (see Table 5.12-4). The OWOW is the area's integrated regional water management Plan (IRWM) which aims to address four major threats to water resources by focusing on six main vision statements.

Table 5.12-4 One Water One Watershed Plan

Four Major threats to the Santa Ana Watershed	Six-part Mission/Vision Statement
1. Climate Change resulting in reduced water supplies combined with increased water needs in the region 2. Colorado River Drought Conditions resulting in pressures on imported supply due to upper basin entitlements and continued long-term drought; 3. San Joaquin-Bay Delta Vulnerability resulting in loss of supply due to catastrophic levee failure or changing management practices of the Delta; and 4. Population Growth and Development resulting in interruptions in hydrology and groundwater recharge while increasing water needs.	1. A watershed that is sustainable, drought-proofed and salt-balanced by 2035, and in which water resources are protected and water is used efficiently 2. A watershed that supports economic and environmental viability 3. A watershed that is adaptable to climate change 4. A watershed in which environmental justice deficiencies are corrected 5. A watershed in which the natural hydrology is protected, restored, and enhanced 6. A water ethic is created at the institutional and personal level.

5.12.3.2 Thresholds of Significance

A project is considered to have a significant effect if the project would

- Not have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities that the construction of could cause significant environmental effects.

5.12.3.3 Impacts

Would the Project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

The General Plan Update has outlined a number of goals, policies, and actions for sustainable water use. The overall vision for infrastructure and green systems is multi-faceted and includes incorporating integrated water management best practices ("the right water for the right use"), and making water conservation a way of life.

These specific goals, policies and actions for water use are found in two locations in the General Plan; Chapter 10 Infrastructure and Green Systems, and Chapter 12 Sustainability and Resilience and presented in Table 5.12-5.

Table 5.12-5 Water Goals, Policies and Actions

Goal	Policy and/or Action
Chapter 10 Infrastructure and Green Systems	
Goal 1: Fontana collaborates with public and private agencies for an integrated and sustainable water resource management program.	**POLICY** • Support initiatives to provide a long-term supply of the right water for the right use through working with regional providers and the One Water One Watershed Plan. **ACTIONS** A. Be active in regional water resource planning and implementation. B. Continue to participate in the Santa Ana Watershed Authority planning and implementation efforts. C. Advocate with the IEUA for more recycled water and groundwater recharge. D. Use an integrated water management approach when working on land use and zoning changes. E. Incorporate integrated water management best practices into land use and zoning initiatives including water conservation and recycling as well as permeability and infiltration.

Table 5.12-5 Water Goals, Policies and Actions

Goal	Policy and/or Action
Goal 2: Fontana promotes use of non-potable water for uses where drinking water is not needed.	**POLICY** • Encourage use of processed water from the IEUA systems using recycled water for all non-drinking water purposes. • Promote laundry-to-landscape greywater systems for single-family housing units. **ACTIONS** A. Identify an area and builder for a potential greywater pilot project. B. Identify developers who are building subdivisions with greywater systems and explore the potential of a pilot project in Fontana. C. Use greywater systems in any new municipal buildings or municipally-funded affordable housing projects, if feasible. D. Explore the feasibility of greywater systems in city-owned or -funded projects. E. Publicize information on no-permit laundry-to-landscape greywater systems. F. Seek local partners, such as the Inland Empire Utility Agency, to create an education campaign on laundry-to-landscape greywater systems. G. Offer a course in setting up these systems through the Public Works Department. H. Seek collaborations with local hardware stores to teach the systems to residents.
Goal 3: The city continues to have an effective water-conservation program.	**POLICIES** • Support landscaping in public and private spaces with drought-resistant plants. • Continue successful city water conservation programs and partnerships. **ACTIONS** A. Develop drought-tolerant (xeriscaping) designs and maintenance programs for public spaces rather than eliminating plants because of drought. B. Identify systems and methods to provide sufficient water to establish new plants as they become more drought-tolerant, such as the use of recycled water. C. Continue to promote drought-tolerant landscaping and water conservation activities for homeowners, tenants, and other property owners. D. Promote Fontana Water Company initiatives including water surveys and landscape audits; water conservation kits; workshops in drought-tolerant landscaping; rebates on washers, toilets, irrigation controllers, rain barrels and other water conservation assistance. E. Connect water conservation and drought-tolerant landscaping with use of recycled laundry water through local plant nurseries and gardening groups.

Table 5.12-5 Water Goals, Policies and Actions

Goal	Policy and/or Action
Goal 4: The City of Fontana consistently seeks reasonable rates from the city's drinking water providers.	**POLICY** • Support City negotiations to keep drinking water rates reasonable for residents and other users. **ACTION** Continue to advocate for reasonable drinking water rates.
Chapter 12 – Sustainability and Resilience	
Goal 7: Conservation of water resources with best practices such as drought-tolerant plant species, recycled water, greywater systems, has become a way of life in Fontana.	**POLICY** Continue to promote and implement best practices to conserve water.

As outlined above, the General Plan includes many goals, policies, and actions directed toward water conservation, and use of the "right water for the right use." These actions would result in reduced water consumption on a per capital basis that would help offset the increased demand from additional household, commercial and industrial uses.

It is through their Urban Water Management Plans (UWMP)s that the purveyors determine the actions needed to continue serving their customers into the future. The FWC 2017 UWMP identified a number of conservation efforts, and reportedly met its interim 2015 per capita water use target and was anticipating meeting the 2020 per capita water use target. The UWMP is updated every five years as dictated by the Urban Water Management Planning Act (UWMP Act). It is anticipated that the UWMP will continue to be updated every 5 years with strategies and measures to meet demand through 2035 and beyond.

The FWC projected water use to the 2040 as part of their UWMP. The projected water use through 2040 is found in the Table 5.12-6.

Table 5.12-6 FWC UWMP Projected Water Use by Use Type: 2020-2040

Use Type	Additional Description (as needed)	Projected Water Use Report to the Extent that Records are Available				
		2020	2025	2030	2035	2040-opt
Single Family		19,944	23,511	24,926	26,188	27,404
Multi-Family	multi-family residential duplex individually metered, public authority multi-family	3,862	4,553	4,827	5,071	5,306
Institutional/Governmental		3,278	3,864	4,097	4,304	4,504
Other	commercial/industrial	7,251	8,548	9,063	9,522	9,964
Other	construction	689	812	861	904	946
Other	unbilled unmetered (estimated as 1.25% of total supply)	491	579	614	645	675
Other	fire hydrants	17	20	21	22	23
Losses		3,028	3,569	3,784	3,975	4160
Other	raw water	580	580	580	580	580
TOTAL		**39,140**	**46,036**	**48,773**	**51,211**	**53,562**
NOTE: Volumes are in AF.						

The projected water demand in FWC service area for the year 2035 is approximately 51,211AF, or 16,244AF over the 2015 use of 34,967AF (see Table 15.12-7). The UWMP includes water sources, demand management measures, shortage contingency planning, and lists projected projects, as well as projected water supplies. In the 2015 UWMP, December 2017 update, the UWMP has identified a "reasonably available volume" of water of 53,711AF, which exceeds the forecasted demand (53,562 AF).

Through implementation of General Plan Update Chapter 10 Infrastructure and Green Systems Goal 1, "Fontana collaborates with public and private agencies for an integrated and sustainable water resource management program" and associated policies and actions, as well as implementation of the City's codes and ordinances related to development, impacts to water resources will be less than significant. In addition, as development is proposed and analyzed, water allocation will be required as part of permit approval and entitlement. Any new or increase in size of existing infrastructure will be a requirement of the developer. Individual projects in the City would be reviewed on a project-by-project basis to determine water requirements applicable to each development and to ensure compliance with these requirements. It is anticipated that adequate water supplies are available through existing water entitlements as well as future conservation and reuse programs for the projected growth in population over the General Plan Update planning horizon. Therefore, no significant impacts will occur to water supply.

Table 5.12-7 FWC UWMP Projected Water Supply 2020-2040

Water Supply	Additional Detail on Water Supply	Projected Water Supply				
		2020	2025	2030	2035	2040 (opt)
		Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume
Purchased or Imported Water	IEUA	10,000	12,000	12,000	12,000	12,000
Purchased or Imported Water	SBVMWD	2,000	2,000	2,000	2,000	2,000
Groundwater	Chino Basin	9,920	10,416	13,153	15,591	17,942
Groundwater	Rialto-Colton Basin	2,520	2,520	2,520	2,520	2,520
Groundwater	No Man's Land Basin	4,000	4,000	4,000	4,000	4,000
Surface Water	Lytle Creek	5,700	5,700	5,700	5,700	5,700
Recycled Water		1,000	1,500	2,000	2,500	3,000
TOTAL		**40,140**	**47,536**	**50,773**	**53,711**	**56,562**
NOTE: Volumes in AF						

Require or result in the construction of new water treatment facilities or expansion of existing facilities that the construction of could cause significant environmental effects.

The General Plan Update does not include construction or expansion of any specific water facilities projects, nor does the City of Fontana own or maintain the water supply infrastructure. Much of the anticipated growth is directed to areas in and around the urban core of the City where water delivery infrastructure already exists.

Construction of new or improvements to existing water facilities depends upon the rate and locations of growth, along with deterioration of aging facilities. Thus, identifying the specific location(s) or timing of new or expanded facilities is speculative. As stated previously, the General Plan Update is intended to guide orderly planned and sustainable growth through the Goals, Policies, and Actions embodied in the General Plan Update. Also, as discussed previously, the water purveyors that supply water to the City of Fontana have indicated the ability to serve the population through existing entitlements and it is not anticipated that major water infrastructure will be required; however, existing infrastructure will be required to be maintained and upgraded over time and service extensions to new service areas will be required. These routine maintenance and improvements would occur in a manner that is planned according to capital improvement plans implemented by the water purveyors. The effects of those projects will be evaluated at such time as they are proposed, environmental impacts analyzed, and

significant impacts mitigated as necessary. Therefore, no significant impacts are known at this time to occur from the construction of new water treatment facilities or expansion of existing facilities.

5.12.3.4 Mitigation Measures

No mitigation measures are required that would further reduce the identified less than significant impacts.

5.12.4 Wastewater

5.12.4.1 Existing Conditions

The City owns Fontana's sanitary sewer system of over 250 miles of sewer lines and six sewage pump stations. While Fontana owns this infrastructure, the wastewater treatment services are supplied by a regional authority, the Inland Empire Utilities Authority (IEUA), which also delivers recycled water for non-potable uses.

In addition to being a water wholesaler, the IEUA also collects and treats wastewater; produces high-quality renewable products such as recycled water, compost and energy; and promotes sustainable use of groundwater and development of local water supplies. The IEUA has developed systems to recharge groundwater. The IEUA owns and operates six regional wastewater treatment facilities, including one in nearby Ontario and one in Rancho Cucamonga. Wastewater treatment is provided by IEUA.

The City of Fontana is within the service area of two of IEUA's Regional Plants (RP), RP-1 and RP-4. The treatment capacity of RP#1 is 44 million gallons per day (gpd), and currently treats approximately 28 million gpd, or 65% of its capacity. This is down from a high of approximately 37 million gpd in 2006/2007. The treatment capacity of RP-4 is 14 million gpd, and typically treats approximately 10 million gpd or approximately 71% of capacity.

The City's Sewer Master Plan (2000) identifies sewage flow generation factors for various land uses (see table 5.12-8).

Table 5.12-8 Wastewater Generation Factors

Land Use	Generation rate (gpad*)
Residential	
Commercial	10.76
Industrial	10.76
Public Facility	5.38
NOTE: gallons per acre per day	

5.12.4.2 Thresholds of Significance

A project is considered to have a significant impact on wastewater service if it would:

- 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.
- Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

5.12.4.3 Impacts

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

While the population and amount of commercial and industrial development is anticipated to increase through 2035, the various water conservation goals and policies, and presence or absence of drought conditions will have a direct effect on the volume of wastewater.

In addition, growth anticipated with the General Plan Update will be guided by several goals and policies for wastewater. These include those listed below and in Table 5.12-9.

- Collaborate closely with the Inland Empire Utilities Agency to promote innovative and resource-efficient systems and reduce sewer fees.
- Support and participate in IEUA programs that help Fontana be more resource-efficient.
- Support incorporation of greywater systems in new developments.

Table 5.12-9 Wastewater Goals, Policies, and Actions

Goal	Policy and Action
Goal 5: Fontana collaborates closely with the Inland Empire Utilities Agency to promote innovative and resource-efficient systems	**POLICIES** • Support and participate in IEUA programs that help Fontana be more resource-efficient. • Support incorporation of greywater systems in new developments. **ACTIONS** A. Advocate for more "purple-pipe" recycled water systems to serve all large users in Fontana who could benefit from using recycled water in irrigation. B. Over the long term, as part of programs to encourage "water-wise" development, consider incentives, such as streamlined permitting, for new residential developments that install greywater systems, and developing a program with IEUA to reduce the sewer fees to residences that install greywater plumbing.

Table 5.12-9 Wastewater Goals, Policies, and Actions

Goal	Policy and Action
Economy Education and Workforce Development Goals	
Goal 1: Promote a diversified economy that builds on existing sectors and develops, attracts, and retains future job-creating sectors.	H. Consider expediting infrastructure improvements at the Southwest Industrial Park (SWIP) to attract a diversified light industrial base that includes manufacturing and research and development as well as logistics firms, and at other Fontana locations targeted for certain business types.

Wastewater in Fontana is directed to and treated at Regional Plants 1 and 4 (RP-1 and RP-4). Both of these plants have available capacity. In addition, wastewater streams can be somewhat manipulated amongst the two plants to a certain extent as demand may require.

Fontana's population in 2035 is forecasted to be 269,066 people in 70,560 households, which is an increase from the 2015 population by almost 60,000 people, or about 17,200 households[2].

In addition, approximately 95 million new square feet of commercial and industrial development could occur in the planning horizon.

The increase in use and population will increase the demand on the wastewater system. However, the water conservation measures will likely serve to reduce the per capita demand over historical levels due to diversion (graywater, recycled water), and reductions in water use from conservation efforts. As development is proposed and analyzed, available wastewater capacity will need to be identified as part of the entitlement process. Any new or increase in size of existing infrastructure may be a requirement in part or whole to be paid by the developer. Potential for significant impacts would be identified and mitigated as necessary on a per-project basis and cannot be measured at this time. Therefore, impacts would be less than significant.

Would the project require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Construction of new or improvements to existing treatment facilities depends upon the rate and locations of growth, along with deterioration of aging facilities. The City does not operate the regional plants, or the wastewater system. As such, the General Plan Update does not include construction or expansion of any specific wastewater facilities projects. Thus, identifying the specific location(s) or timing of new or expanded facilities is speculative. Construction of new or expanded wastewater treatment facilities could result in environmental impacts; however, those projects would be reviewed for the potential for site specific impacts at that time, and appropriate mitigation, if necessary would be applied. Therefore, no significant impacts are known at this time to occur from the construction of new wastewater treatment facilities or expansion of existing facilities.

Would project wastewater treatment requirements exceed the requirements of the applicable Regional Water Quality Control Board?

Wastewater treatment is handled by the IEUA. The IEUA will be responsible for ensuring their facilities meet the requirements of the RWQCB. The General Plan Update calls for all new developments to meet current building codes. Additionally, all new developments will be subject to development fees, a portion of which would go toward sewer improvements. The City collects development impact fees for sewer expansion to help mitigate impacts to sewer. The General Plan also aims to promote innovative and resource-efficient systems and reduce sewer fees. It does not include any goals, policies or actions that would promote exceedances to wastewater requirements. Therefore, no significant impacts are known at this time to occur due to the requirements of the RWQCB.

5.12.4.4 Mitigation Measures

No mitigation measures are required that would further reduce the identified less than significant impacts.

5.12.5 Solid Waste

5.12.5.1 Existing Conditions

Solid waste disposal services for Fontana are provided by Burrtec Waste Industries, a private company under franchise agreement with the City of Fontana. Burrtec also operates Fontana's curbside recycling (including greenwaste recycling) program. The City recycles over 50% of solid waste and is projected to meet state requirements of 75% recycling by 2020. Waste is taken to the Mid-Valley Landfill. Mid Valley Landfill located at 2390 Alder Avenue in Rialto, California.

Mid-Valley is the primary solid waste depository for the area. Burrtec also operates a transfer station in Rancho Cucamonga. The current permitted solid waste disposal at the Mid-Valley landfill is 7,500 tons per day. With a design capacity to accept 8,280 tons per day.[10] The anticipated life for the landfill at its currently permitted capacity is 2033.

According to CalRecycle, 42.7 million tons of material went to disposal in California in 2016. That equates to a per person waste generation of approximately one ton per person per year. The target defined by AB 341 for 2020, is less than a half ton of waste per resident per year. Using the 2016 rate, the City of Fontana generates 213,000 tons per year.

[10] Solid Waste Facility Permit 36-AA-0341 stamped August 2013.

5.12.5.2 Thresholds of Significance

A project is considered to have a significant impact on solid waste service if it cannot:

- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.
- Comply with federal, state, and local statutes and regulations related to solid waste.

5.12.5.3 Impacts

Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

According to the operating permit for the Mid Valley landfill, the current anticipated closure date - corresponding to the current permitted capacity - is 2033.

Fontana's population in 2035 is forecasted to be 269,066 people in 70,560 households, which is an increase from the 2016 population by almost 60,000 people, or about 17,200 households. In addition, the General Plan allows for up to 95 million square feet of new commercial and industrial uses.

An increase in population and developed area may not necessarily correlate to an increase in solid waste disposal over the same period. San Bernardino County overall saw a 35% decrease in solid waste disposal while the population grew by 8% between 2005 and 2014.[11] As well, the 2011 projected capacity of the landfill was thought to be met by 2033[12]; however, more recent projections indicate the same landfill may have capacity to accept waste for another 30-40 years (Stantec 2016).

Using the 2016 waste generation rate reported by CalRecycle as a statewide average (one ton per person per year) the City generates 213,000 tons of waste per year and would generate approximately 269,000 tons per year in 2036. However, with the targets set by AB 341 for 2020 (75% diversion) the projected solid waste produced in 2035 would be less than 134,500 tons per year.[13]

The challenge for Fontana, as well as communities throughout the state, is to continue to find diversion, recycling, and reuse strategies instead of relying on sanitary landfills as the primary method of managing solid waste. As the region grows, it becomes more difficult to site or expand landfills due to the unpopularity of these types of facilities.

In 2015, San Bernardino County published a Community Indicators Report which looked at the County as a whole against various matrices representative of, or Indicators, of the overall

[11] Community Indicator Report, San Bernardino County, 2015.
[12] 2011 MND for Composting permit revision, Solid Waste Facility Permit for 36-AA-0055
[13] CalRecycle August 2017

County health. This report considered solid waste as one of these matrices. The report concluded that waste disposal had decreased by 35% between 2005 and 2015, despite a population increase in 8% over the same period, "suggesting that in the face of population growth, economic factors and diversion programs are driving the decline."

The General Plan Update includes several overarching goals related to solid waste (see Table 5.12-10). These are:

- All residences and businesses have a dependable, environmentally safe means of disposing of solid waste.
- Continue providing city waste-management services.
- Continue to maximize diversion opportunities and landfill capacity by supporting recycling innovations, such as E-waste, commercial, multi-family and organic waste recycling programs.

Table 5.12-10 Solid Waste Goals Policies and Actions

Goal	Policy and Action
Goal 8: All residences, businesses, and institutions have a dependable, environmentally safe means to dispose of solid waste.	**POLICIES** • Continue to use best practices for environmentally safe collection, transport and disposal of hazardous wastes. • Continue to maximize landfill capacity by supporting recycling innovations, such as organic waste recycling for compost. **ACTIONS** A. Continue recycling and green waste programs. B. Continue to work with San Bernardino County to minimize impacts from the landfill. C. Explore establishing a public or private disposal station for RVs and trailers.

Various state laws require waste diversion. For example, AB 1826 requires businesses who meet certain thresholds to recycle their organic waste. It also requires local jurisdictions to implement an organic waste recycling program to divert organic waste generated by businesses (including multifamily buildings of five or more units, but not including household waste from the units).

The General Plan Update includes policies to maximize landfill capacity by supporting recycling innovations, such as organic waste recycling for compost. These types of policies and diversion laws have the potential to offset the increase in waste generated by population growth.

The General Plan Update would not have a significant impact to solid waste service or facilities because no specific land development activity is proposed. The increase in population and potential for increase in solid waste would be analyzed on a per project basis.

With adherence to the municipal code, environmental review procedures, and the General Plan Update policies to minimize impacts to landfill capacity, impacts would be less than significant.

Would the project comply with federal, state, and local statutes and regulations related to solid waste?

The City provides its residents with recycling and diversion information through the County's Solid Waste Management Division. The City contracts with Burrtec Industries to collect municipal solid waste. Burrtec delivers solid waste to the Mid-Valley Landfill, which operates under a permit from San Bernardino County Department of Public Health, Solid Waste Management Division which requires regular reporting and monitors compliance.

The General Plan Update is not anticipated to negatively affect the ability of the solid waste handler or receiver site to comply with regulations. Therefore, impacts would be a less than significant.

5.12.5.4 Mitigation Measures

No mitigation measures are required that would further reduce the identified less than significant impacts.

5.12.6 Stormwater

5.12.6.1 Existing Conditions

The City of Fontana and the San Bernardino Flood Control District (SBCFCD) share responsibility of the stormwater system in the City of Fontana. The SBCFCD is responsible for operations and maintenance of the regional flood control facilities. The City is responsible for the local drainage system, detention basins, and storm drain lines that connect in to the regional facilities.

The City of Fontana's storm drain system eventually empties into the Santa Ana River without being cleaned at treatment plants. Anything that flows through the system, besides rainwater, is called stormwater pollution.

Fontana participates in a regional stormwater permit, overseen by the Santa Ana Regional Water Quality Control Board, under the Federal Clean Water Act and the Water Pollution Control Act. The National Pollutant Discharge Elimination System (NPDES) established permits for regulating both point and nonpoint pollution to the navigable waters of the United States. "Point" pollution comes from a specific location, such as a factory. "Nonpoint" pollution comes from general stormwater runoff. It can include pollutants such as oil, grease and chemicals from streets and parking areas, fertilizer and pesticides from lawns, sediment from poorly managed construction sites, and bacteria from pet and wildlife wastes and faulty septic systems.

Municipal Separate Storm Sewer Systems (MS4s, or commonly known as local storm drains) are operated by public agencies, and each system has a National Pollutant Discharge Elimination System (NPDES) permit to facilitate the prevention of pollutants entering local bodies of water.

The City of Fontana works together with other agencies in San Bernardino County as part of the San Bernardino Areawide Stormwater Program. Participating agencies include the County, Flood Control District, and all 16 cities in the area (Big Bear Lake, Chino, Chino Hills, Colton, Fontana, Grand Terrace, Highland, Loma Linda, Montclair, Ontario, Rancho Cucamonga, Redlands, Rialto, San Bernardino, Upland, and Yucaipa). Working together, the agencies collaborate to protect and improve the health of the Santa Ana River watershed. Working cooperatively, they effectively reduce pollutants from urban runoff. The collaboration is called the San Bernardino County Stormwater Program, with the Principal Permittee being the San Bernardino County Flood Control District.

In addition to enforcement of NPDES permits, the City of Fontana is focusing on managing stormwater through development standards that promote on-site treatment of stormwater, including with low-impact development standards, as well as other best management practices (BMPs). These practices contribute to groundwater recharge. Stormwater management that enhances stormwater percolation on site by using or mimicking natural systems is called "green infrastructure."

5.12.6.2 Thresholds of Significance

A project can be considered to have a significant impact if it would cause the following conditions:

- Require or result in the construction of new storm water treatment drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

5.12.6.3 Impacts

Would the project require or result in the construction of new storm water treatment drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

The General Plan Update does not propose to change drainage patterns within the Planning Area. Instead, it will adopt policies and actions to limit the additional amount of stormwater from new development and protect water quality throughout the City and SOI. The General Plan Update includes several goals, policies and actions toward responsible stormwater management. The overall goals are to: 1) Use natural stormwater management ("green infrastructure") when possible and 2) design for aesthetic and recreational benefits. The specific goals, policies, and actions proposed are presented in Table 5.12-11.

Table 5.12-11 Stormwater Goals, Policies and Actions

Goal	Policy and Action
Goal 6: Fontana has a stormwater drainage system that is environmentally and economically sustainable and compatible with regional one water one watershed standards.	**POLICIES** • Continue to implement the Water Quality Management Plan for stormwater management that incorporates low-impact and green infrastructure standards. • Promote natural drainage approaches (green infrastructure) and other alternative non-structural and structural best practices to manage and treat stormwater. **ACTIONS** A. Continue to maintain traditional stormwater infrastructure as needed, while developing methods to promote ultimate infiltration of the water. B. Explore options for infiltration of water from traditional stormwater facilities and develop methods to measure quantity. C. Promote simple green infrastructure retrofits for existing buildings and properties, such as rain barrels. – Traditional stormwater infrastructure incorporates pipes, excavation, and armored channels. The goal is to isolate stormwater and convey it away as efficiently as possible into a water body or detention pond. Examples of this type of infrastructure can be seen in the concrete flood control systems in Fontana. The IEUA's program that uses Fontana's recycled water for infiltration and groundwater recharge is an example of the "one water" approach that could serve as a model for Fontana. D. Revise development standards to reflect low-impact and green infrastructure stormwater management requirements in order to meet or exceed watershed goals. E. Create an interdepartmental working group to audit the code to identify where changes are needed and resolve issues. In addition to Public Works, Planning, and Engineering, departments such as Community Services, Police, and Fire, as well as appropriate regional agencies, should be included in the discussions. F. Provide aesthetic benefits by incorporating green infrastructure in landscape design for public and private commercial projects. – Green infrastructure should be incorporated into designs for public spaces and the required landscape elements of private commercial projects. G. Identify how green infrastructure will be maintained. Green infrastructure is much less capital-intensive than traditional "gray" infrastructure, but it requires maintenance. H. Routine activities in vegetated areas include weeding and removing sediment and trash. Additional maintenance may be required to repair damage and other non-routine events. There is potential to include nonprofits and community groups in maintenance programs, including training programs for youth. I. Use green infrastructure in public projects.

Table 5.12-11 Stormwater Goals, Policies and Actions

Goal	Policy and Action
	J. Use street parkways and medians to treat and infiltrate runoff in transportation projects, new development, and redevelopment. K. Use permeable surfaces to promote infiltration wherever feasible. – Vegetated or pebbled swales with permeable pedestrian paths can substitute for traditional paving. Raising awareness among residents of the benefits of this system may be needed. In addition, appropriate surfaces are needed to meet ADA requirements

Fontana's population in 2035 is forecasted to be 269,066 people in 70,560 households, which is an increase from the 2016 population by almost 60,000 people, or about 17,200 households. The General Plan buildout also allows for approximately 95 million square feet of new commercial and industrial development. While the increase in population in new dwelling units, and new commercial and industrial could increase the demand for stormwater conveyance, the General Plan Update contains numerous low impact development measures that, in concert with adherence to NPDES discharge permit requirements, will limit impacts to stormwater both in volume, intensity, and quality, both during construction and post-construction.

The General Plan Update does not approve any specific development or stormwater upgrades or improvements. The General Plan Update includes a policy to continue to maintain traditional stormwater infrastructure as needed, while developing methods to promote ultimate infiltration of the water. In addition, as part of the MSWMP, the City is required to perform yearly inspections and reports, and to clean its facilities as needed to insure proper functioning, as well as require various BMPs and apply applicable regulations to any new development.

Future stormwater conveyance facilities may be required to extend or expand – and pay for - storm drain facilities per the City's Master Plan of Drainage. Site specific issues or deficiencies would be addressed through development review process through the City. Other projects contained in the City's Capital Improvement Program (CIP) would be paid for in part or in whole through or collection of development impact fees. The City collects Development Fees to mitigate development impacts to storm drainage.

Impacts of the installation or expansion of storm drain facilities would be addressed on a per-project basis for compliance with City ordinances including the MSWMP, and CEQA. Therefore, no significant impacts are known at this time to occur from the construction of new stormwater conveyance facilities or expansion of existing facilities.

Please see Chapter 5.8 Hydrology and Water Quality for additional discussion of impacts to stormwater, drainage, and water quality.

5.12.6.4 Mitigation Measures

No mitigation measures are required that would further reduce the identified less than significant impacts.

5.12.7 Schools

5.12.7.1 Existing Conditions

Two public school districts serve most of the City of Fontana: Fontana Unified School District (FUSD) and the Etiwanda School District (pre-K to 8). In addition to these two school districts, small areas of Fontana are covered by the Colton Joint Unified School District (southeast Fontana); the Chaffey Joint Union High School District (northern Fontana), and the Rialto School District (northeast).

Fontana Unified School District (FUSD) serves most of the city and has an enrollment of 40,674 students in 46 schools during the 2015-16 academic year. This is the eighth consecutive year of enrollment declines. Peak enrollment was 42,050 students during the 2004-2005 academic year. The enrollment decline coincides with the Great Recession and abrupt decrease in new housing construction in Fontana.

The Etiwanda School District has five schools located in Fontana serving over 4,000 students in the 2014-2015 school year. The Colton Joint Unified School District has three elementary schools in Fontana enrolling approximately 1,900 students. One elementary school located in Fontana is part of the Rialto School District. The Chaffey Joint High School District does not have a school located in Fontana but serves some students from the area.

In addition, a new magnet school will be built at Merrill and Alder that has been available by lottery and includes dual-language immersion and a pre-international baccalaureate curriculum. When FUSD disposes of property it owns, the decision-making process includes a community advisory committee and first right of refusal to public entities.

The Comprehensive Facilities Master Plan for the Fontana Unified School District analyzed the existing school capacity in its 2015 report. They found:

> *Based on the information reviewed, the District can house and additional 3,973 students at the elementary grade levels; 816 students at the middle school grade levels; and 1,560 students at the 9-12 level. Based on enrollment projections included in the Ten-Year Enrollment Projections (2013/14—2022/23) the District will not have a need to additional classrooms for the period of this master plan.*
>
> *This data indicates that the District has sufficient capacity at all levels to accommodate the future enrollments. At peak levels, the K-5 enrollment is projected to be 18,186. The District elementary capacity is 26,370. At peak projected enrollments, the 6-8 school population is projected to be 8,553 students, the District's 6-8 capacity is 8,606. The*

District's peak projected high school enrollment is 11,280 in 2021. The high school capacity is 14,404.

The Asset Management section of this Plan indicates that the District could remove 217 underutilized portable classrooms at elementary school sites and still have sufficient capacity for the projected enrollment for the next 10 years.[14]

5.12.7.2 Thresholds of Significance

A project is considered to have a significant impact if it would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services.

5.12.7.3 Impacts

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services?

The General Plan Update does not propose the development or construction of specific new school facilities. The General Plan Update includes several goals, policies and actions to support educational achievement to prepare students for higher-paying jobs of the future. The specific goals, policies, and actions proposed are presented in Table 5.12-12.

Table 5.12-12 Economy, Education, and Workforce Development

Goal	Policy and Action
Goal 2: Support education and workforce development programs in Fontana to foster education achievement and skill development that prepares students and workers for the higher-paying jobs of the future.	**POLICIES** • Make school completion and educational achievement a high civic priority with broad community support. **ACTIONS** A. Encourage expansion of existing and new educational institutions in Fontana.

The Fontana Unified School District Master Plan (2015) was prepared with a 2022/2023 planning horizon. The Plan concludes, amongst other things, that there was sufficient capacity through the 2022/2023 horizon year, however that middle school capacity would be closing in on the maximum available capacity. The capacity data is not projected using population data, rather enrollment trends, and anticipated a net gain of 1% over nine years. The middle school

[14] FUSD Comprehensive Facilities Master Plan 2015

population was anticipated to top out in 2018, then decrease through 2022, or 2.4% over the same nine years.

Given the projections in the 2015 Master Plan, there is excess capacity to accommodate nearly 8,000 elementary school students, 53 6-8 graders and more than 3,000 high school age children beyond the 2022/2023 plan year.

Although enrollment has declined somewhat in recent years, and some capacity exists at this time, it has been determined that it does not have capacity where it will need it most—where entitled developments are likely to be built as residential development returns during the next ten years. FUSD expects to build a new middle school and one or two elementary schools in the next decade, depending on the pace of development.

New housing would be constructed over time in response to market forces. A corresponding increase in population would also occur over time. Fontana's population in 2035 is forecasted to be 269,066 people in 70,560 households, which is an increase from the 2016 population by almost 60,000 people, or about 17,200 households. On average, each household in Fontana generates 0.7 schoolchildren. Thus, if the anticipated increase in population follows the average generation rate, the General Plan Update planning horizon may see an additional 12,040 new schoolchildren not accounting for potential declines in enrollment from demographic changes in the overall population.

FUSD and the Etiwanda School District monitor growth in their District boundaries and updates their facilities plans as needed. Through this monitoring, they identify the need for new facilities, including locations, timing, and funding. At the same time, they will continue to collect development impact fees as provided for in State law. As well, all new nonresidential development would be required to pay impact fees. Pursuant to State law, collection of fees by school districts is sufficient in mitigating for any potential impacts to school facilities that result from long-term growth in the community.

The School District collects Developer Fees to help offset the cost of providing school services. These fees, as of 2018 are presented in Table 5.12-13.

While the need for additional facilities has been identified, the General Plan Update does not consider nor provide for construction of new schools. If or when new schools are needed and proposed, the project specific details will be analyzed for the potential impacts pursuant to CEQA at that time. Typical impacts associated with new and improvements to existing schools includes short-term construction activities, construction-related air quality pollutant emissions, traffic and circulation impacts.

Table 5.12-13 Development Impact Fees

Type of Construction	Cost per Square Foot
Fontana Unified Developer Fees	
New Residential (Non-Commercial)	$3.48
Residential Additions	$3.48
Commercial Industrial	$0.56
Senior Housing	$0.56
Etiwanda School District Developer Fees	
Residential (new)	$2.85 per sf, plus $3,351.76 per unit
Residential (Additions)	$2.40
New Commercial/Industrial	$0.39
SOURCE: FUSD 2018, Etiwanda School District 2018	

An increase in population in areas of the City may trigger the need for additional schools. However, due to uncertainty and lack of specificity with regard to the location of new or expanded schools the prediction of environmental impacts is speculative at this time. Therefore, no significant impacts are known at this time to occur from the construction of new school facilities or expansion of existing facilities.

5.12.7.4 Mitigation Measures

No mitigation measures are required that would further reduce the identified less than significant impacts.

5.12.8 Parks & Recreation

5.12.8.1 Existing Conditions

Public facilities in Fontana include parks, sports centers, community centers, cultural centers, a nature center, public services facilities (including city hall, the community services department building, and the public works center); one veterans' resource center; the auditorium and the library. The City's Community Services Department has responsibility for parks, recreation, and programming.

Park goals in the 2003 General Plan included providing parks accessible to all segments of the population and in newly developed areas; joint use agreements with school districts; and funding of parks and trails through the capital improvement program.

Since the 2003 General Plan, parks and open spaces have increased from 23 parks and 232 acres to 41 parks on 366 acres providing recreation opportunities. Facilities and improvements completed since the 2003 General Plan include the creation of the Parks and Recreation Master Plan and the San Sevaine Trail Connectivity Plan. The City has also developed the Civic Center

Campus, rehabilitated the downtown theater, the Pacific Electric Trail, Fontana Park Aquatic Center, the Jessie Turner Health and Fitness Center, the Fontana Community Senior Center on Ceres Avenue, the Heritage Neighborhood Center, and an expansion of the police facility.

Downtown murals were installed and a downtown amphitheater (Miller Amphitheater) was opened on May 10th, 2018. Additionally, a history museum is in the works. There is extensive recreational programming throughout the city as well as a range of downtown programming, including a half marathon, holiday parade, car shows, summer concerts, and arts programs.

The City of Fontana is processing the Central City Park Project; a future park to be located around the Cypress Community Center located between Oleander Ave and Cypress Avenue south of Upland and north of the Pacific Electric Bike Trail. The City is also in the planning stages for a new park to be developed in the Southern portion of Fontana.

In addition to the 41 parks on 366 acres, the City has 1,255 acres of land for public use, including large regional parks (see Table 5.12-14). The City defines its parks in two categories, Neighborhood Parks and Community Parks. Neighborhood Parks serve an area within a half mile (a "comfortable walking distance" as defined by the Public Works Department), while Community Parks serve a larger area within a 1.5-mile radius.

Other public lands that are not classified as parks are utility corridors, school sports fields, land in the foothills, and pockets of open space throughout Fontana's neighborhoods. These public lands are sometimes upgraded with trails and amenities, and in other locations are simple open areas. Open spaces are also included in the City's zoning as Natural area (OS-N) and Resource area (OS-R).

Table 5.12-14 Protected Open Space in Fontana

Park	Acres
Almeria Park	8.389
Bill Martin Park	11.399
Cambria Park	2.176
Catawba Park	11.892
Chaparral Park	8.61
Coyote Canyon Park	15.023
Fernandez Park	3.207
Fiesta Park	1.285
Fontana Park	34.034
Fontana holding 1	14.384
Heritage Circle Park	3.008
Heritage Neighborhood Ctr.	16.905

Table 5.12-14 Protected Open Space in Fontana

Park	Acres
Hunters Ridge Park	4.715
Jack Bulik Park	23.531
Jurupa Hills OS	9.652
Koehler Park / The Landings	9.998
Martin Tudor Jurupa Hills /Mary Vagle Center/ Regional Park	861.224
McDermontt Sports Complex & McDermontt Park West	22.461
Miller Park	5.604
North Heritage Park	1.343
North Tamarind Park	5.049
Northgate Park	1.363
Oak Park	3.382
Patricia Marrujo Park	5.049
Patricia Murray Park	1.804
Ralph M Lewis Sports Complex	19.548
Rosena Park	13.578
San Sevaine Park	15.66
Santa Fe Park	0.999
Seville Park	3.795
Shadow Park	5.903
Southridge Park	24.807
Sycamore Hills Park	3.081
Veteran's Park	23.464
TOTAL	**1,196.322**
Total without regional park	*335.098*
SOURCE: California Protected Lands databas	

Parks, Recreation, and Trails Master Plan 2008

The City of Fontana created a Parks, Recreation and Trails Master Plan in 2008 in order to review current facilities, identify deficiencies, and plan for expansions and improvements to City-owned parks and trails. The Plan serves as a guidance document in developing the City's Capital Improvement Program. The plan included analysis of unincorporated areas within the city's Sphere of Influence.

The 2008 plan recommended expansion of existing parks and recreation centers, improvements to existing City parks and joint-use facilities, development of new parks in the city and its Sphere of Influence, and development of more recreational trails and open space. The plan recommended specific improvements at individual parks, including enhancements like resurfaced parking lots, picnic shelters, new athletic fields and courts, trail extensions, and additional improvements. Recommendations included improvements for existing parks, expansion of existing parks (including Mango Linear Park, Seville Park, Northgate Park and Southridge Community Park) and development of new parks, including 13 acres of park in the Arboretum Specific Plan area and 19 acres within the Westgate Specific Plan area— most of which had been designated, as of 2015.

The 2008 plan proposed a network of trails, including recreational trails, following utility and flood-control corridors and bicycle routes through the existing city street network. The proposed network of trails was intended to connect Fontana to nearby regional open spaces and neighboring cities. The plan recommended adaptations of existing streets to create bicycle infrastructure and the use of bike-friendly design standards for future development.

The City of Fontana partners with three school districts in joint/exclusive-use agreements of public land to provide for the recreational needs of the community. The City partnered with 49 schools within the Fontana Unified School District, the Colton Joint Unified School District and the Etiwanda School District for use of approximately 650 acres of land on school sites. The City counts 25% of this land as usable recreation areas in its reporting, resulting in a measure of 163 acres of "joint use" facilities.

Through preparation of the 2008 plan, the City identified three underserved areas including Foothill South, West Fontana, and North Jurupa. The General Plan Update includes a policy to annex the Foothill South county area into the City of Fontana (refer to Goal 6 of the General Plan Update) and the Strategic map designates portions of this area for walkable mixed-use development.

Recent Accomplishments

The City of Fontana General Plan Annual Report for the 2016 calendar year reported on recent progress. The City has carried out improvements and maintenance to existing parks such as new shade structures at Jack Bulik and Bill Martin Parks, and new LED security lighting. The Arboretum Specific Plan in the north end of the City includes two public parks dedicated to the City. The

two parks, 0.7 and 4.6 acres in size, will include outdoor picnic and lawn area, shade structures, bench seating, basketball court, walking paths, play fountain and spray park.

In 2016 the City was awarded $2.9 million dollars for completion of the San Sevaine Trail from two sources. Specifically, almost $2.5 million from the State and $500,000 from the Mobile Source Air Pollution Reduction Review Committee. This money will go to building the north/south bicycle and pedestrian trail adjacent to the San Sevaine Flood Control Basin from the City of Fontana at the Pacific Electric Trail trailhead to Banyan Street in Rancho Cucamonga.

In May 2018 the City completed Miller Park Amphitheater consisting of approximately 2 acres of improvements including turf grass, berms, walkways, dance floor, vendor areas, water feature, and a 2000 square foot stage, storage facility and connected utilities.

In addition to existing public parks and open spaces, the City has a number of approved but undeveloped residential projects (Specific Plans and others) that include new public and private park areas.

5.12.8.2 Thresholds of Significance

A project can be considered to have a significant impact if it would cause the following conditions:

- A project may also be considered to have a significant impact if it includes recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.
- A project is considered to have a significant impact if the project increases 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.

5.12.8.3 Impacts

Would the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The performance objective or standard for parks and recreation is 5 acres of parkland for every 1,000 residents (two acres of community parks for every 1,000 residents and three acres of neighborhood parks for every 1,000 residents).

The City population in 2035 is expected to be 269,066. With a standard of 5 acres per 1,000 residents, the City would need 1,345 acres of park land. The City currently has approximately 1,621 acres total in parks and land for public use, enough to meet this performance standard, therefore based on future populations projections associated with the planning horizon of the General Plan Update there would not be a need for new or altered parks.

The General Plan Update includes a policy to find funding to implement the San Sevaine Trail, and design and implement an "Eastside Trail". The City was awarded a significant amount of grant funding for the San Sevaine Trail in 2016. The potential impacts related to trail construction will be analyzed as part of that project.

The details of the Eastside Trail project are too speculative to include an analysis at this time. At such time as funding becomes available and prior to construction of such facilities, project specific analysis for consistency with codes and ordinances, along with environmental review, would be conducted.

Since the General Plan Update does not specifically propose construction of new facilities, and the build out under the General Plan Update will not exceed the performance standard set for parks, the Goals, Policies, and Actions associated with the General Plan Update are considered to have a less than significant impact on recreation.

A project is considered to have a significant impact if the project increases 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.

The City currently collects 3 acres of parkland or in-lieu fees from new residential subdivisions for every 1,000 residents in accordance with California Government Code Section 66477 (Quimby Act). Additional sources for the City to obtain parkland include general fund revenues, developer impact fees, state and federal grants, user group contributions, school district joint use contributions, and concessions. Other methods that the City pursues to supplement parkland include encouraging the development of private open space and recreational amenities, in addition to required parks, in large residential projects.

The General Plan Update includes a number of "Big Picture" goals and policies for increasing active and passive recreational opportunities as the City grows. These are found in the Conservation, Open Space, Parks and Trails Chapter, as well as Building a Healthier Fontana Chapter. Fontana recognizes the connection between a healthier community and the environment. These include:

- Conserve sensitive natural open spaces in the foothills.
- Locate parks to provide walking access for all residents.
- Create additional trails to link with the Pacific Electric Trail and nature trails.
- Ensure adequate park maintenance.
- Create a Tree and Shade Master Plan.

In addition to these big picture goals, the General Plan Update identifies Goals, Policies and Actions in the Conservation, Open Space, Parks and Trails Chapter, along with several actions in the Health and Wellness Chapter are related to parks and trials. These are found in Table 5.12-15 below.

Table 5.12-15 2015-2035 General Plan Parks and Recreation Goals, Policies and Actions

Goals	Policy and/or Action
Conservation, Habitat and Urban Forest	
Fontana continues to preserve sensitive natural open space in the foothills of the San Gabriel Mountains and Jurupa Hills.	• Consider permanent protection for all these lands through acquisition and deed restrictions.
Large city parks and open spaces include plantings and natural areas attractive to birds and other wildlife.	• Use public open space to support wildlife habitat as appropriate.
Fontana has a healthy, drought-resistant urban forest, 25% tree canopy, and an urban forestry program.	• Support tree conservation and planting that enhances shade and drought resistance.
Open Space for Outdoor Recreation, Public Health and Safety	
The City of Fontana has a no-net-loss policy for public parkland.	• Establish legal requirements for replacement, when any city-owned park land listed in the California Protected Lands database is transferred to other uses, with land of equivalent environmental, recreational, or aesthetic value.
All Fontana residents live within walking or biking distance of a public park and there are sufficient public parks to serve all areas of the city.	• Establish park access by walking and biking as a criterion for park location and for design of active transportation networks. • Continue to use a minimum standard of 5 acres of public parkland per 1,000 persons. • Pursue park development where parkland is insufficient.
All public parks are designed and maintained to a high standard.	• Promote park designs that can serve multiple constituencies and provide aesthetic benefits. • Provide sufficient funding to support adequate park maintenance.
The Fontana parks system has a nonprofit partner that raises money for park improvements.	• Promote creation of a Fontana Parks Foundation, a nonprofit to support park system improvements and activities.
Fontana updates the Parks, Recreation and Trails Master Plan at least every 10 years.	• Support a Parks, Recreation, and Trails Master Plan update consistent with the General Plan in 2018 and every 10 years thereafter.
Trails	
Fontana has multiuse trails that provide north-south links and connections with the Pacific Electric Trail and other city pedestrian and bicycle routes.	• Seek funding sources to implement the San Sevaine Trail, and design and implement an "Eastside Trail" linking the City from north to south in the eastern part of the city. • Advocate with other municipal partners to state lawmakers for opportunities to use utility easement land as trails and parks.

Table 5.12-15 2015-2035 General Plan Parks and Recreation Goals, Policies and Actions

Goals	Policy and/or Action
Trails in natural areas offer nature recreation.	• Support trail creation and maintenance in natural areas.
Health & Wellness Goal The average lifespan in Fontana is consistently within the top ten of all Southern California cities	**ACTIONS** D. Promote lifelong healthy lifestyles through parks and amenities. E. Update the city's Parks Master Plan to reflect needed improvements to service in the community. F. Create or update park design guidelines to improve existing parks and open space facilities and expand recreational programs as a means of improving the health of Fontana residents. G. Address landscaping and cosmetic improvements that will appeal to community members, increase shading, increase the feeling of safety and security through more lighting, visibility from streets, and access to emergency call towers, and specify that active play structures and/ or amenities should be designed to accommodate a range of ages and abilities. H. Collaborate with the school districts to design joint-use facilities.

Park and recreational facility use over time is anticipated to increase as the population increases through 2035. The City has included in the General Plan Update, a goal of keeping all public parks designed and maintained to a high standard, with a policy to provide sufficient funding to support adequate park maintenance. In addition, the General Plan Update includes a policy to create a Fontana Parks Foundation to support park system improvements and activities.

With implementation of the General Plan Update policies, including the maintenance and funding policies, parks and recreational facility are not anticipated to incur substantial physical deterioration, therefore the General Plan would have a less than significant impact to recreation.

5.12.8.4 Mitigation Measures

No mitigation measures are required that would further reduce the identified less than significant impacts.

5.12.9 References

Fontana General Plan Update Background Report, April 2016. City of Fontana.

Draft Environmental Impact Report for Fontana General Plan Update August 6, 2003

Fontana Forward: General Plan Update 2015-2035, October 9, 2017

Dudek, February 2018 Pacific Freeway Center Project Final Environmental Impact Report

Fontana Fire Protection District. Fontana Fire Protection District Strategic Plan. January 2013

San Gabriel Valley Water Company, Fontana Water Company Division, 2015 Urban Water Management Plan. Final-June 2016 (Amended December 2017) West-Yost Associates.

Total School Solutions. Comprehensive Facilities Master Plan Fontana Unified School District. January 1, 2015.

Fontana Police Department Fiscal Year 2015-2016 Report (https://www.fontana.org/documentcenter/view/10348)

Fontana Fire Protection District Fiscal Year 2015-2016 Report https://www.fontana.org/documentcenter/view/10341

Westgate Specific Plan Final EIR, September 2015. PCR Services Corporation for the City of Fontana.

CEQA Appendix G Environmental Checklist Form http://resources.ca.gov/ceqa/guidelines/Appendix_G.html last accessed 3.8.2018

IEUA SSMP: IEUA Sewer System Management Plan, Inland Empire Utilities Agency 2015.

California Energy Commission Staff Report: 2015 Natural Gas Outlook. June 2016 CEC-200-2015-007-SF

California Energy Commission http://www.energy.ca.gov/almanac/naturalgas_data/

FUSD. Fontana Unified School District Fall 2015/2016 Enrollment Projections.

5.13 TRANSPORTATION

This section describes the transportation network and traffic conditions within the planning area and evaluates potential transportation impacts due to implementation of the General Plan Update. Information in this section is based on the Fontana General Plan Update Background Report (Stantec 2016) and the Fontana General Plan Update Traffic Analysis (Stantec 2017).

5.13.1 Environmental Setting

5.13.1.1 Existing Transportation Network

Figure 5.13-1 illustrates the existing transportation network within the planning area, which includes all of the existing roadways together with the location of the Fontana Metrolink Station, park and ride lots, bus stop locations, and bicycle facilities. Similar facilities in the adjacent communities are also shown for reference.

Interchanges with Interstate 10 (I-10), I-15, and State Route 210 (SR-210) provide regional highway access to the planning area.

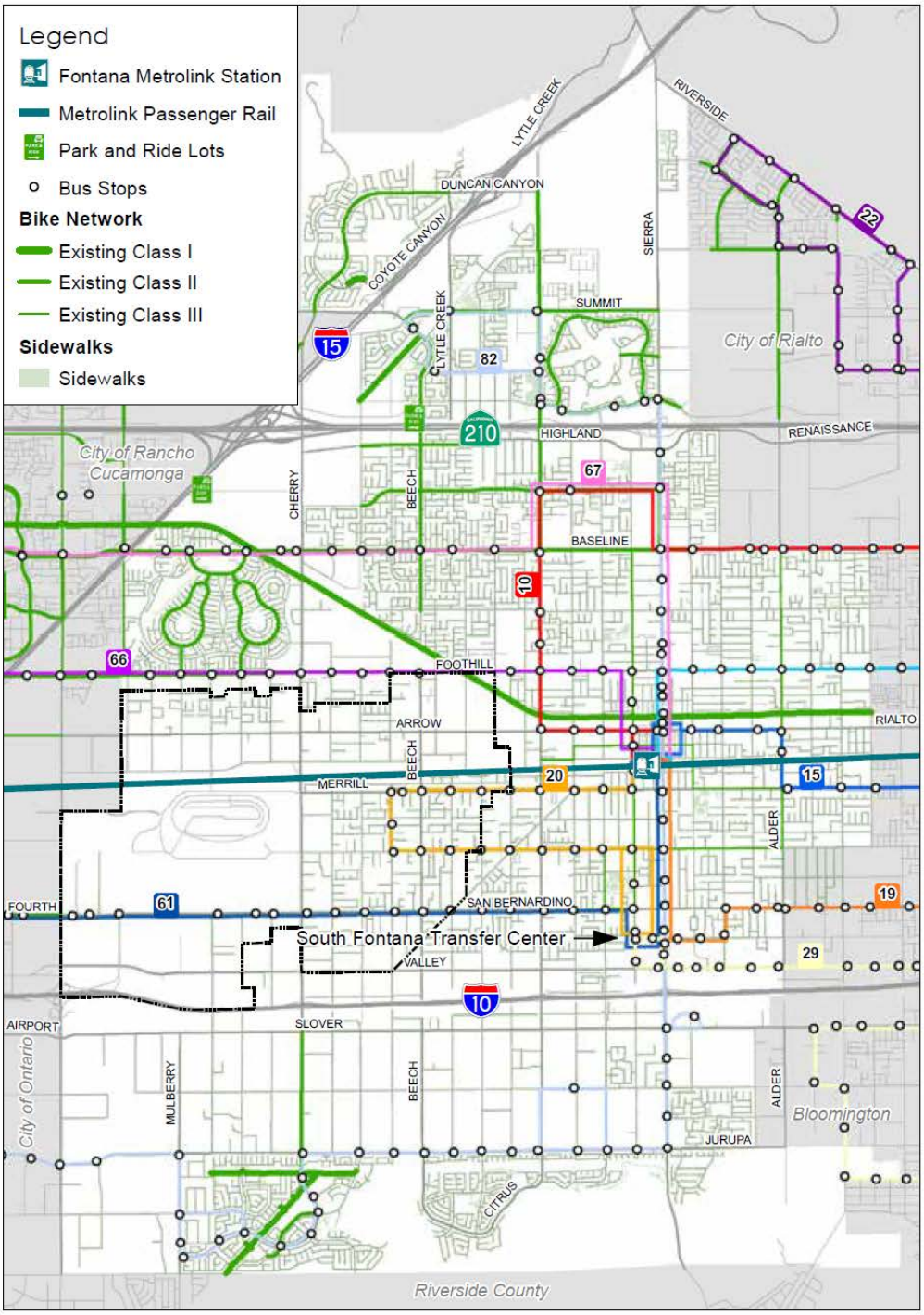
The City's arterial roadways are classified according to the type of service they provide. Each classification is described by the roadway size and function, and has specific physical dimensions, particularly with respect to the number of lanes that are provided. As such, the following roadway functional classification, referred to as the Hierarchy of Streets, has been established for the City:

Major Highways

Major Highways have up to six lanes in most situations. Where Major Highways cross freeways it may be necessary to increase the capacity to eight lanes. Theses streets typically have raised medians or two-way left turn lanes. These facilities can carry high volumes of traffic. The majority of the Major Highway network in the City has already been improved. Sidewalks and bike lanes should be added whenever possible and bus bays should be installed as turnouts. New development should incorporate Complete Street components as outline in the City's Active Transportation Plan (ATP).

Primary and Secondary Highways

These roadways have up to four travel lanes. Primary Highways typically connect Major Highways and often have raised medians or two-way left turn lanes. Secondary Highways also have up to four lanes of travel and are typically used to carry traffic along the perimeters of large developments. Because traffic volumes are not as high as compared to Major Highways, these wide roads are ideal for Complete Street concepts.



Mobility
October, 2015
Data source: City of Fontana, Metrolink, Omintrans, SANBAG

Figure 5.13-1 Existing Transportation Network

Collector Streets

These roadways can accommodate two or four lanes of traffic. They are typically used to take traffic from neighborhoods to Primary and Secondary Highways. Collector Streets are also used in industrial areas to funnel trucks from their point of services to the Truck Route network. Whether connecting residents to Primary Highways or trucks to Truck Routes, Collector Streets are ideal candidates for Complete Street concepts. Where possible, physical buffers such as landscaped parkways or solid dividers should be used to separate vehicular traffic from bicycles and pedestrians.

Local Streets

These are two lane roads in large part serving residential neighborhoods. In addition to Complete Street concepts, traffic calming measures should be incorporated whenever possible. Local streets should consider automobile parking curb adjacent with bike lanes striped along the roadside of the parking area.

Hierarchy of Streets

The City's Hierarchy of Streets Plan is illustrated in Figure 5.13-2. Additional right-of-way dedication beyond the approved typical travel lane requirements may be required in order to accommodate turn lanes, center medians, intersection improvements and complete street improvements. The roadway hierarchy of streets are briefly described above.

Historically, streets in Fontana, like most Cities, were designed according to capacity and level of service (LOS) for automobiles with little consideration for Complete Streets principles. Moving forward, Fontana will use a Multimodal LOS as a measurement in the rating of the performance of streets, balancing transit, bicyclists, and pedestrians with vehicle LOS. Street hierarchy will dictate the number or travel lanes while the recently adopted ATP will, where feasible, identify improvements for bicycle, pedestrian and public transit connectivity. Where in the past land use would dictate transportation systems, now moving Fontana Forward, transportation systems will serve land use choices.

For planning purposes, a generalized vehicle capacity of each roadway type based on the roadway hierarchy and the number of travel lanes is utilized for analysis. A summary of the roadway hierarchies discussed above is provided in Table 5.13-1 with the corresponding daily vehicular capacities. These average daily traffic (ADT) roadway capacities are considered planning-level capacities that are useful in identifying relative levels of roadway utilization within a circulation system.

Table 5.13-1 Arterial Roadway Hierarchies and Capacities

Standard Roadway Hierarchy	Mobility and Access Characteristics	Typical ROW Width	Typical Number of Lanes	Approximate Capacity
Major Highway	These facilities carry high traffic volumes and are the primary thoroughfares linking Fontana with adjacent cities and the regional highway system. Driveway access to these roadways is typically limited to provide efficient high volume traffic flow.	132'	6 lanes with raised median and additional turn lanes at intersections	54,000 ADT
Primary Highway	These roadways are designed to carry high traffic volumes and provide limited access. Their primary function is to link the major highways to the secondary highways as well as to carry vehicles entering and exiting the City from neighboring areas. Driveway access is also typically limited on these facilities where feasible.	104'	4 lanes with raised median and additional turn lanes at intersections	36,000 ADT
Secondary Highway	These highways carry traffic along the perimeters of major developments, provide support to the major and primary highways, and are also through streets enabling traffic to travel uninterrupted for longer distances through the City.	92'	4 lanes and additional turn lanes at intersections	24,000 ADT
Collector Street	These roadways connect the local streets with the secondary highways allowing local traffic to access the regional transportation facilities.	68'	2 lanes	12,000 ADT
Sources: Fontana General Plan Update Traffic Analysis, Stantec 2017a				

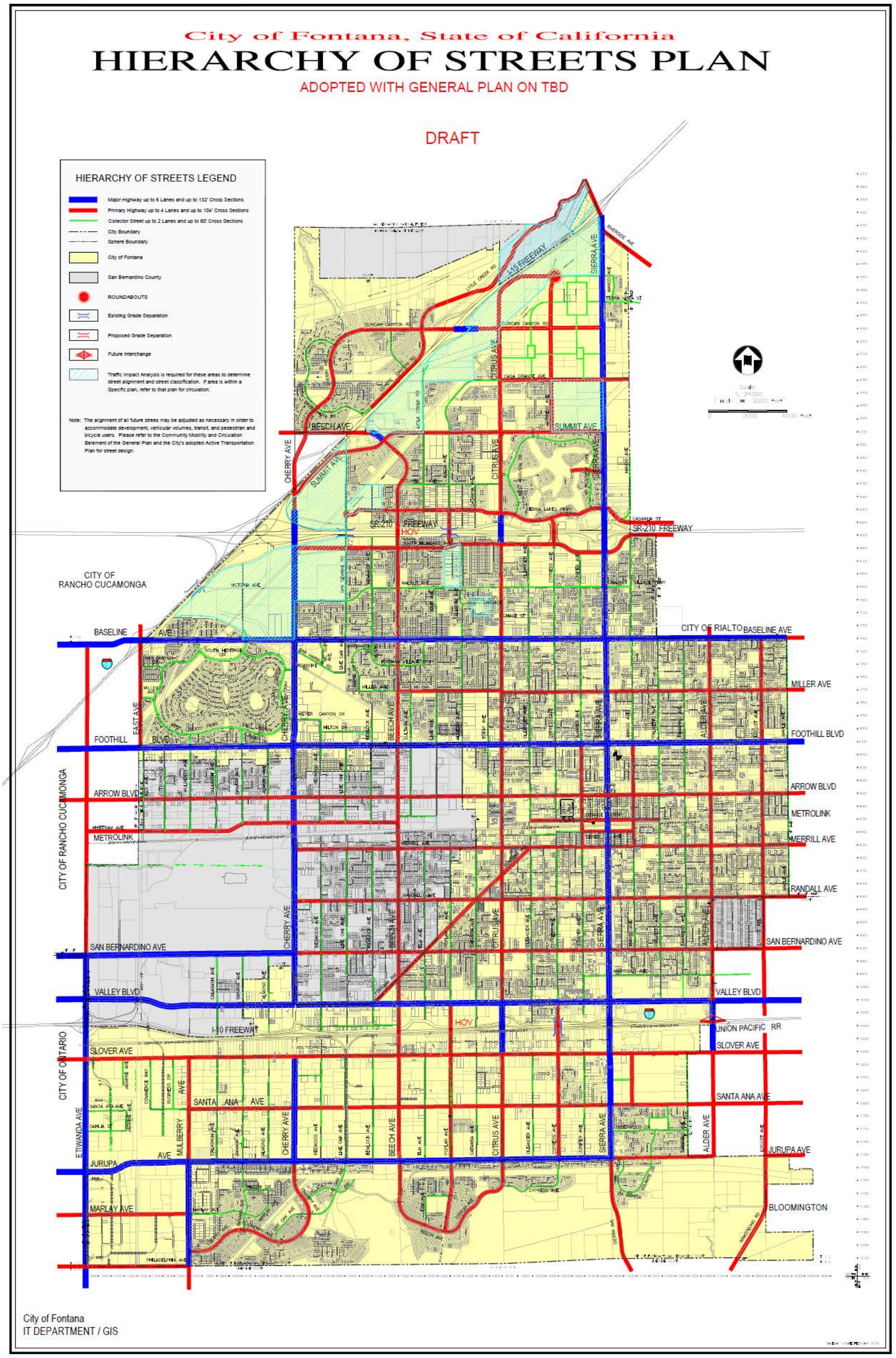


Figure 5.13-2 Hierarchy of Streets Plan

Performance criteria is utilized to determine existing and future vehicular operating conditions on the City's roadway circulation system. Traffic LOS is designated "A" through "F" with LOS "A" representing free flow conditions and LOS "F" representing conditions that exceed the theoretical capacity of the roadway, which is an indicator of high levels of traffic congestion. Table 5.13-2 summarizes general LOS descriptions for urban and suburban streets as well as the range of volume to capacity (V/C) ratios that correspond to LOS "A" through "F" conditions.

Table 5.13-2 Automobile LOS Descriptions

Automobile LOS	Description	Volume/ Capacity
A	Free traffic flow, low volumes and densities. Little or no restriction on maneuverability or speed	< 0.61
B	Stable traffic flow, speed becoming slightly restricted. Low restriction on maneuverability	0.61 - 0.70
C	Stable traffic flow, but less freedom to select speed, change lanes, or pass. Density of the number of vehicles increasing	0.71 - 0.80
D	Approaching unstable flow. Speeds tolerable but subject to variation. Less maneuverability and driver comfort	0.81 - 0.90
E	Unstable traffic flow with fluctuating speeds and flow rates. Short headways, low maneuverability and lower driver comfort	0.91 - 1.00
F	Forced traffic flow. Speed and flow may drop to zero with high densities	> 1.00
Source: Fontana General Plan Update Traffic Analysis, Stantec 2017a		

5.13.1.2 Existing Traffic Volumes

Figure 5.13-3 illustrates existing ADT volumes on the arterial highway system. These traffic volumes are derived from vehicle traffic counts collected by the City on various dates between 2001 and 2015. Since the traffic volumes were collected over several years, volumes for each location were factored to a common baseline year representing 2017 conditions utilizing growth factors derived from a comparison of traffic counts of prior years.

ADT traffic volumes on City streets generally range from 1,000 to 35,000 ADT with the highest volumes occurring on major highways that carry traffic to and from the I-10, I-15, and SR-210 freeways. Sierra Avenue, just north of I-10 (between I-10 and Valley Boulevard) carries the most traffic of any single local roadway segment in the City at approximately 52,000 ADT. Sierra Avenue, Citrus Avenue, Cherry Avenue, and Etiwanda Avenue are the heaviest traveled roadways, and each have segments that carry volumes between 30,000 and 35,000 ADT. North of Valley Boulevard, Sierra Avenue drops to approximately 31,000 ADT.

Freeway traffic volumes are highest on I-10 which carries over 200,000 ADT through the City. I-15 carries between 130,000 and 143,000 ADT north of SR-210, and SR-210 carries between 112,000 and 134,000 through the City.

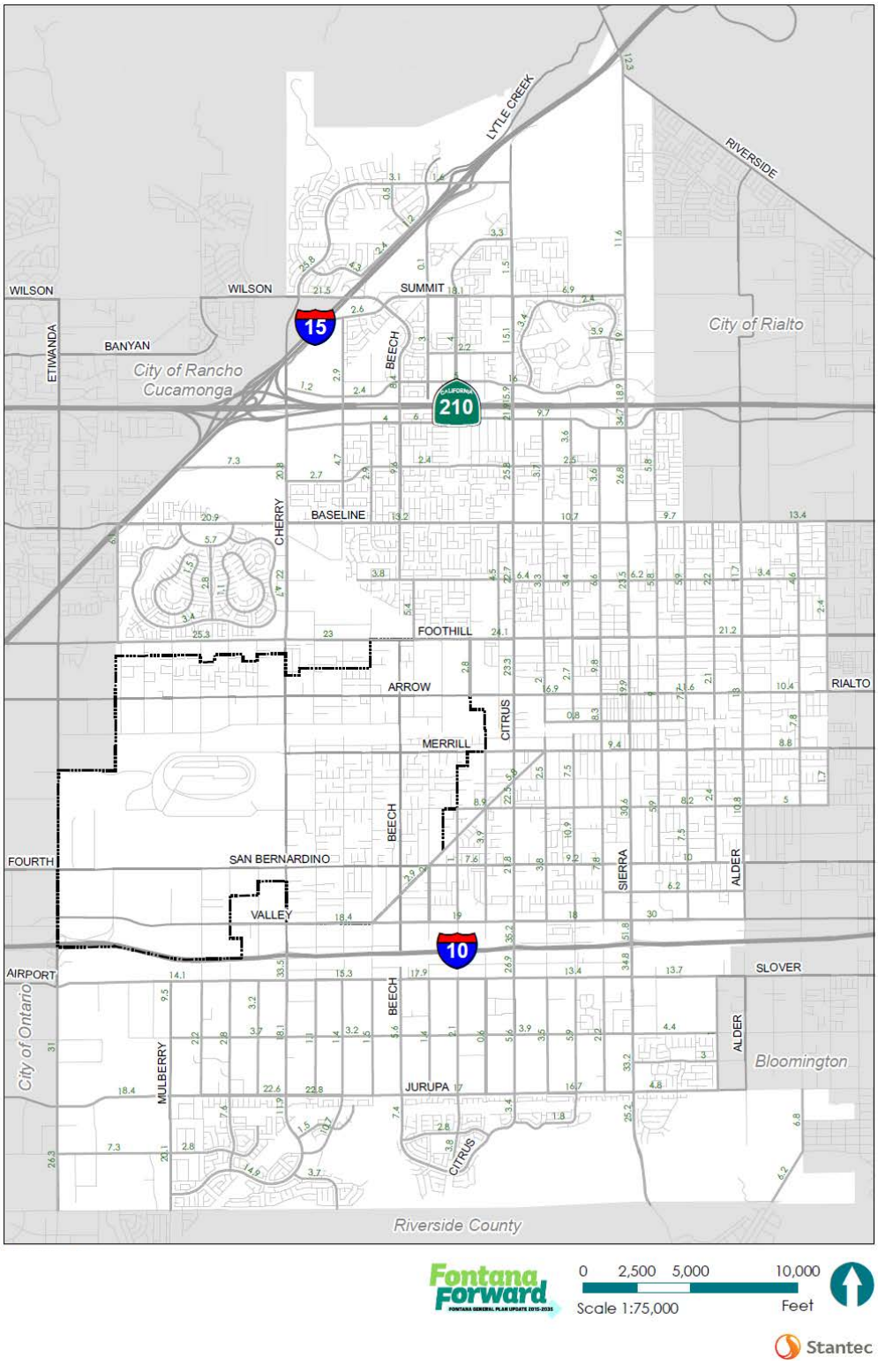


Figure 5.13-3 Existing (2017) ADT Volumes

The existing condition traffic volumes, together with roadway capacities that are based on each facility's classification, determine the V/C ratios and LOS for the City's arterial system. The Fontana General Plan Update Traffic Analysis (Stantec 2017a) determined that all arterial roadways in the City currently experience ADT volumes lower than the roadway's theoretical maximum capacity.

Policy 1-12 of the City's current General Plan identifies LOS "C" as the desirable LOS for City roadway, wherever feasible (City of Fontana 2003). In total, the Fontana General Plan Update Traffic Analysis (Stantec 2017a) determined that 11 roadway segments are currently exceeding LOS "C", with three at LOS "D" and eight at LOS "E". Those 11 roadway segments are as follows:

• Citrus Avenue	between Foothill Boulevard and Baseline Avenue	LOS "E"
	between Arrow Boulevard and Foothill Boulevard	LOS "E"
	between Randall Avenue and Arrow Boulevard	LOS "E"
	between Valley Boulevard and Randall Avenue	LOS "E"
• Cypress Avenue	between Valley Boulevard and Randall Avenue	LOS "E"
• Etiwanda Avenue	between Jurupa Avenue and Slover Avenue	LOS "D"
• Mulberry Avenue	between Philadelphia Avenue and Jurupa Avenue	LOS "D"
• Sierra Avenue	between Summit Avenue and Riverside Avenue	LOS "E"
	between Foothill Boulevard and Baseline Avenue	LOS "E"
	between Valley Boulevard and Merrill Avenue	LOS "D"
	between Valley Boulevard and I-10	LOS "E"

Following is a discussion of each of the roadways currently operating at LOS "E", which are the roadways where existing traffic volumes are approaching the roadway's capacity limit.

Citrus Avenue between Baseline Avenue and Valley Boulevard is designated on the Hierarchy of Streets Plan as a Secondary Highway. It is currently constructed as a four-lane roadway with center turn lanes present at key intersections, consistent with its Plan designation. Between Arrow Boulevard and Fontana Avenue, Citrus Avenue has a center median. With a theoretical maximum capacity of 24,000 ADT and current traffic volumes that range between 22,000 ADT and 23,000 ADT in these segments, Citrus Avenue currently exhibits V/C ratios over 90 percent between Baseline Avenue and Valley Boulevard.

Cypress Avenue between Randall Avenue and Valley Boulevard is designated as a Collector Street on the Hierarchy of Streets Plan. It is currently constructed as a two-lane roadway without a center turn lane, consistent with its Plan designation. With a theoretical maximum capacity of 12,000 ADT and current traffic volumes of approximately 11,000 ADT in these segments, Citrus Avenue currently operates close to its theoretical maximum capacity between Randall Avenue and Valley Boulevard.

Sierra Avenue is designated as a Major Highway throughout the City, except for south of Jurupa Avenue where it is designated as a Primary Highway. It is currently constructed at various widths, with segments ranging from two-lanes to six-lanes. Three segments are currently operating with V/C ratios over 90 percent as listed above. Of these, the segment between Riverside Avenue and Summit Avenue is currently constructed at various widths, but primarily as a two-lane roadway which is less than its Hierarchy of Streets Plan designation as a Major Highway with six lanes. With a theoretical maximum capacity of 12,000 ADT and current traffic volumes of approximately 11,000 ADT in these segments, Sierra Avenue between Riverside Avenue and Summit Avenue is currently approaching the maximum capacity of the current two-lane configuration.

The segment of Sierra Avenue between Baseline Avenue and Foothill Boulevard is currently constructed at various widths, but primarily as a four-lane roadway which is less than Hierarchy of Streets Plan designation as a Major Highway with six lanes. With a theoretical maximum capacity of 24,000 ADT and current traffic volumes also approximately 24,000 ADT in these segments, Sierra Avenue between Baseline Avenue and Foothill Boulevard is currently operating at its theoretical maximum capacity of the current four-lane configuration.

The segment of Sierra Avenue between Valley Boulevard and I-10 is a short segment generally constructed as a six-lane roadway with dual left-turn lanes at intersections and a fourth northbound through lane that functions as an auxiliary lane between the freeway off-ramp and Valley Boulevard. With a theoretical maximum capacity of 54,000 ADT and current traffic volumes of approximately 52,000 ADT in this segment, Sierra Avenue is currently exhibiting a V/C ratio over 90 percent of its theoretical maximum capacity between Valley Boulevard and I-10.

5.13.1.3 Roadway Performance Criteria for Vehicles

Two types of performance criteria are used for assessing roadway operations for vehicles. The first is based on ADT roadway volumes, which provides a high-level assessment of operating conditions and is appropriate for long-range planning purposes. The second is based on peak hour intersection volumes, which the City uses to assess the impacts of specific projects and is most appropriate for short-range analysis. These criteria include "performance standards" which represent desired operating conditions for the roadway system. For this analysis of long-range General Plan buildout conditions, ADT roadway volumes represent the appropriate measurement for vehicular traffic. Listings of roadway ADT capacity and descriptions of the corresponding LOS are presented above in Section 5.13.1.1. Refer to Section 5.13.3 for thresholds of significance used for impact analysis.

5.13.1.4 Public Transportation

The City is served by public transit services provided by both bus and rail. These services are supplemented by park-and-ride facilities at two locations in the City.

Bus Routes

The City is served by both fixed-route transit services and demand responsive paratransit services to meet the needs of riders with disabilities. Fixed-route bus services include bus lines that are operated primarily by Omnitrans, while demand-responsive services have defined service areas but do not operate based on fixed schedules or routes. Omnitrans currently operates 10 bus routes through the City and adjusts the number of routes and lines periodically based on ridership patterns. Only one transit line (Omnitrans 82) extends to the north end of the City, limiting connectivity for people who live north of SR-210, and limiting access to commercial and recreational amenities by transit-dependent residents in southerly or central portions of the City. The Victor Valley Transit Authority (VVTA) also operates one bus route with stops in Fontana. Omnitrans operates the Access ADA Service which provides curb-to-curb service for those who are unable to use the fixed route service independently.

Rail Transit

Commuter rail service in Fontana is provided by the Southern California Regional Rail Authority's (SCRRA) regional "Metrolink" service which provides passenger rail service to Los Angeles, Orange, Riverside, San Bernardino, San Diego (Oceanside only) and Ventura Counties. The San Bernardino Line traverses east to west through the City along a former Santa Fe Railroad line, now operated by the Burlington Northern Santa Fe (BNSF) railroad. A Metrolink rail station is located downtown. Metrolink service along the 56.2 mile, 13-station San Bernardino line operates seven days a week with 38 trains a day during the week, 20 on Saturdays, and 14 on Sundays. The nearest station with access to longer distance Amtrak service is Santa Fe Depot in the City San Bernardino to the east. Amtrak trains operate on the Union Pacific (UP) Railroad south of I-10.

Park-and-Ride Facilities

Various park-and-ride facilities are located in Fontana. One is located at the Caltrans Transportation Management Center just east of I-15 on Victoria Street. A second is just north of SR-210 on Beech Avenue. These park-and-ride facility locations are shown on Figure 5.13-1 presented above. The Fontana Metrolink Station Transfer Center also provides park-and-ride facilities and transfer access to the Metrolink regional commuter rail service.

5.13.1.5 Bicycle Network

The City's bicycle network has expanded significantly over recent years. Figure 5.13-1 presented above illustrates the existing bike facilities in the City and adjacent areas. The City recently completed a comprehensive ATP that establishes the framework for residents and visitors of the City to engage in healthier activities and more sustainable living to support Statewide and active transportation goals (Alta Planning + Design 2017).

5.13.1.6 Air Transportation

No aviation facilities exist within the planning area. However, scheduled passenger air service is provided by the nearby Ontario International Airport. Ontario International Airport is located a few miles west of the planning area near I-10 and is a major hub for passengers and cargo. It has two terminals and a separate adjacent international arrivals facility. Multiple commercial passenger carriers, such as American Airlines and Southwest Airlines, operate flights out of Ontario International Airport. The airport is also a hub for freight services such as UPS and FedEx.

Los Angeles International Airport, located approximately 65 miles west of the planning area, and Orange County International Airport, located approximately 50 miles southwest of the planning area, also provide commercial air service to the planning area.

General aviation is served by a number of nearby airports, including Redlands Airport and San Bernardino International Airport.

5.13.2 Regulatory Framework

This section summaries key federal, State and local regulations, plans, and programs applicable to transportation in the context of the general plan planning process.

State Regulations

Global Warming Solutions Act

California Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, requires a sharp reduction of greenhouse gas (GHG) emissions—a significant proportion of which is expected to come from reductions in GHG emissions related to transportation. With this bill, the State committed itself to reducing GHG emissions to 1990 levels by 2020. The Air Resources Board (ARB) is responsible for adopting regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions to comply with AB 32.

ARB adopted its Proposed Scoping Plan for AB 32 in 2008. This scoping plan included the approval of Senate Bill (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.

California Complete Streets Act

California AB 1358, the California Complete Streets Act, was signed into law in 2008. AB 1358 requires circulation element updates to address the transportation system from a multi-modal perspective with considerations for walking, biking, car travel, and transit where appropriate. The act 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."

The Governor's Office of Planning and Research (OPR) released guidelines to provide guidance to local jurisdictions on how to plan for multimodal transportation networks in general plan circulation elements (OPR 2010)

Sustainable Communities and Climate Protection Act

California SB 375, the Sustainable Communities and Climate Protection Act, provides incentives for cities and developers to bring housing and jobs closer together and to improve public transit. The goal is to reduce the number and length of automobile commuting trips, helping to meet the statewide targets for reducing GHG emissions set by AB 32.

SB 375 requires each Metropolitan Planning Organization to add a broader vision for growth, called a Sustainable Communities Strategy (SCS), to its transportation plan. The SCS must outline a plan to meet the region's transportation, housing, economic, and environmental needs in a way that enables the area to reduce GHG emissions. The SCS integrates transportation, land use, and housing policies to plan for achievement of the emissions target for their region. The Southern California Association of Governments (SCAG) adopted its Regional Transportation Plan (RTP) and SCS in 2016.

SB 743

SB 743 changes the way that transportation impacts are analyzed under CEQA by providing an alternative to LOS. The new criteria to be used for CEQA analysis must promote the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses. Most significantly, once the CEQA Guidelines are amended to include those alternative criteria, auto delay will no longer be considered a significant impact under CEQA.

OPR has not finalized the proposed guidelines, however OPR's proposed CEQA Guidelines for Implementing SB 743 defines vehicle miles traveled (VMT) rather than vehicle delay as the appropriate metric for measuring impacts to the transportation system. OPR's draft CEQA revisions state that local agencies will have until January 1, 2020 to adopt new impact guidelines consistent with the new guidance.

Local Regulations

City of Fontana Active Transportation Plan

The Fontana ATP, adopted in 2017, is used to implement infrastructure improvements for better connectivity throughout Fontana and to surrounding cities and the region by providing safe and comfortable walking and bicycling linkages. The ATP addresses the City's goal of becoming a community that is healthy, engaged, economically vibrant, family-oriented, and safe. (Alta Planning + Design 2017)

City of Fontana Development Impact Fee (DIF) Program

The City of has adopted a DIF program pursuant to the requirements of Government Code § 66000 *et seq*. The City's Development Services Department oversees the use of the DIF fees and the DIF is used to fund various projects included in the City's capital improvement program, which is updated periodically. Generally, DIF eligible intersections are those consisting of two intersecting Hierarchy of Streets Plan roadways. Fee credits and reimbursements will be available as part of the DIF program and are given to projects that are identified as a DIF program facility.

San Bernardino Congestion Management Program (CMP)

The CMP was enacted by Proposition 111 to address the increasing public concern that traffic congestion is impacting the quality of life and economic vitality of the State of California. The intent of the CMP is to provide the analytical basis for transportation decisions through the Statewide Transportation Improvement Program (STIP) process, a multi-year 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 San Bernardino County CMP, published and periodically updated by the San Bernardino County Transportation Authority (SBCTA), defines a network of state highways and arterials in the county and provides guidelines regarding LOS standards, impact criteria, and a process for mitigation of impacts on CMP facilities in the county. The minimum acceptable LOS for CMP facilities is defined as LOS "E", with certain exceptions. The San Bernardino County CMP was last updated in 2016.

5.13.3 Thresholds of Significance

According to the CEQA Guidelines, Appendix G, and the City of Fontana Environmental Assessment Checklist, impacts regarding transportation would be significant if the General Plan Update would:

A. Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit

B. Conflict with an applicable CMP, including, but not limited to LOS standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways

C. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks

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

E. Result in inadequate emergency access

F. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance of safety of such facilities

5.13.4 Environmental Impacts

This section examines the proposed Community Mobility and Circulation Element goals, policies and actions. An examination of the impacts on the roadway system associated with traffic due to implementation of the General Plan Update is also provided. Since the General Plan is a planning document, potential conflicts with current planning documents is addressed.

The project could be considered to have a potentially significant impact on mobility and circulation based on the following six criteria:

A. Would the project conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways, and freeways, pedestrian and bicycle paths, and mass transit?

Impact Analysis

The Community Mobility and Circulation Element of the General Plan Update focuses on connecting neighborhoods and City destinations by expanding transportation choice in Fontana. Through goals, policies, and implementation programs contained in this element, the City guides how the circulation system will be shaped to respond to the needs of the community.

While the element supports continuing programs to improve travel by cars and trucks, it provides guidance in the form of Goals, Policies, and Actions on expanding the options for transit and "active transportation" (pedestrian and bicycle mobility) for Fontana. The Plan concepts are consistent with the SCAG 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP-SCS) concepts of Neighborhood Mobility Areas and Livable Corridors. These concepts are applied in the Fontana General Plan Update as "Connected Neighborhoods"; "i3" areas in the central part of the City; and mixed-use development along the central segments of Sierra Avenue, Foothill Boulevard, and Valley Boulevard to form Fontana's "Livable Corridors."

The General Plan Update identifies neighborhoods connected with multi-modal travel options, which will provide areas with up to 1/2-mile walking radii and 3-mile biking radii for safe, comfortable, convenient pedestrian and bicycle travel for local trips within Fontana to schools, parks, civic sites, and shopping areas. This approach builds on the Safe Routes to Schools program in which Fontana is already participating and the Fontana Unified School District walking-distance criteria for transportation, which currently target a 1/2-mile maximum walking distance for kindergarten students. The Community Mobility and Circulation Element seeks to provide more transportation choice for non-work trips to replace some auto trips as described in the Goals, Policies, and Actions below, thereby reducing growth in congestion and air pollution.

The following Goals, Policies, and Actions provided in Table 5.13-3, represent the policy framework of Fontana's General Plan Update Community Mobility and Circulation Element that supports the City's vision to:

> "…take advantage of more transportation choices…[to] walk and bike to nearby parks, schools and stores, use transit and ride sharing, and drive longer distances as needed."

Table 5.13-3 General Plan Update Goals, Policies, and Actions Community Mobility and Circulation Element

Goals & Policies	Actions
Community Mobility and Circulation Element	
Goal 1 – The City of Fontana has a comprehensive and balanced transportation system, with safety and multimodal accessibility the top priority of citywide transportation planning, as well as accommodating freight movement.	
• Provide roadways that serve the needs of Fontana residents and commerce, and that facilitate safe and convenient access to transit, bicycle facilities, and walkways • Apply the six "E's" of the Safe Routes to School program to transportation planning and implementation— Encouragement, Education, Engineering, Enforcement, Evaluation, and Equity • Make land use decisions that support walking, bicycling, and public transit use, in alignment with the 2016-2040 RTP-SCS • Monitor the development of autonomous vehicle systems and potential benefits and impacts on Fontana	A. Establish and implement an integrated program of transportation management and intelligent transportation systems to maximize the efficiency of the existing street system and provide travel options to single-occupancy vehicles. B. Make multimodal transportation a high priority by promoting pedestrian access, bicycle use, and transit options within Fontana and to the surrounding communities. C. Integrate Complete Streets principles into street design guidelines, standards, and other construction guides to create a safe, comfortable, and efficient transportation system that is sensitive to the context of the area it serves. D. Use Multimodal LOS as a measurement in the rating of the performance of streets. E. Maximize available roadway capacity through technologies such as connected vehicle communication systems that link vehicles, the infrastructure, and personal communication devices. F. Support continued development and improvement of the Fontana Metrolink Station as an important transportation node for the City and access to regional destinations and employment centers. G. Support car sharing services and the use of ride-hailing apps to reduce the need for households to own multiple vehicles. H. Encourage the provision of amenities such as seating, lighting, and signage (including real-time arrival information) at bus stops, shuttle stops and the Metrolink station to increase rider comfort, safety, and convenience. I. Collaborate with employers, the school districts, Omnitrans and other agencies to develop and expand programs to reduce dependence on single-passenger auto use and develop shared shuttle services, or provide transit passes, or partner with Omnitrans to provide service to employment areas with multi-modal transit stations.

Table 5.13-3 General Plan Update Goals, Policies, and Actions Community Mobility and Circulation Element

Goals & Policies	Actions
	J. Continue to designate and enforce truck routes to provide freight access while mitigating air pollution impacts on neighborhoods. K. Continue to support freight railroad access to serve Fontana industry. L. Make land use decisions that support walking, bicycling, and public transit use. M. Encourage and require, where feasible, new private developments to dedicate easements and provide improvements for bicycle and pedestrian paths. N. Encourage walkable, compact, higher-density, mixed-use development in downtown and on Livable Corridor areas through land use and zoning adjacent to and within walking distance of the Metrolink Station. O. Explore the potential for multi-way boulevard segments along Livable Corridors. P. Encourage retrofits of connections internally and externally in established, master-planned neighborhoods to encourage safe walking, biking, and connections to neighborhood and City destinations. Q. Ensure that new development proposals include pedestrian and bicyclist connections within and between developments as an integral component of the site design, which may include seating, shading, lighting, directional signage, accessibility, bicycle parking and convenience. R. Rely on the recently adopted ATP to guide the implementation of Complete Streets practices that improve transportation options for everyone—especially those who walk, bike and take transit. S. Include options in the ATP for non-work trips that connect neighborhoods to schools, parks, civic destinations, shopping, and entertainment. T. Maintain and enhance the existing trails such as Pacific Electric Trail and develop new trails. U. Implement the San Sevaine Trail Master Plan through design and construction. V. Create an "Eastside Trail" Master Plan as a north-south designated pedestrian and bicycle route in the eastern part of the City that connects with the Pacific Electric Trail.

Table 5.13-3 General Plan Update Goals, Policies, and Actions Community Mobility and Circulation Element

Goals & Policies	Actions
	W. For existing walled subdivisions, support community efforts to enhance pedestrian and bicycle access to connect these neighborhoods to transit and services through public education and by facilitating retrofitted improvements. X. Add attractive, secure bicycle parking at both public and private facilities. Y. Maintain bicycle and pedestrian infrastructure at high levels to encourage use. Z. Improve amenities such as seating, lighting, secure bicycle parking, street trees, and interpretive stations along public bicycle and pedestrian paths and in City parks to encourage walking and cycling and enhance the perception of safety. AA. Cooperate with surrounding communities and other agencies to establish and maintain multi-jurisdictional bicycle facilities, pedestrian paths and multi-use trails using creek, utility, railroad rights-of- way and green spaces. BB. Monitor the development of autonomous vehicles (cars, trucks, shared vehicles) and potential impacts on Fontana.
Goal 2 – Fontana's road network is safe and accessible to all users, especially the most vulnerable such as children, youth, older adults, and people with disabilities.	
• Design roadway space for all users, including motor vehicles, buses, bicyclists, mobility devices (such as senior scooters), and pedestrians, as feasible and appropriate for the context • Support designated truck routes that avoid negative impacts on residential and commercial areas while accommodating the efficient movement of trucks	A. Avoid major increases in street capacity beyond existing programmed projects unless necessary to remedy severe traffic congestion or critical neighborhood traffic problems. B. Design streets, intersections, and parking areas with safety and all users in mind. C. Maintain acceptable levels of service for transit vehicles, bicyclists, and pedestrians on roads in Fontana. D. Prioritize pedestrian, bicycle, automobile safety and transit accessibility over vehicle LOS at intersections. E. Continue to work with Metrolink to increase safety at train crossings, including improving gate technology, grade separation, and signal coordination. F. Work with Metrolink and local bus service providers to identify opportunities to enhance bicycle and pedestrian accessibility to stations. G. Vigorously and consistently enforce speed limits and other traffic laws.

Table 5.13-3 General Plan Update Goals, Policies, and Actions Community Mobility and Circulation Element

Goals & Policies	Actions
	H. Continue to give high priority to safe school travel routes and the safety and comfort of school children through Safe Routes to Schools projects and in-street modification projects that affect school travel routes. I. Identify and address the needs of people with disabilities and meet or exceed the requirements of the *Americans with Disabilities Act* (ADA) during the planning and implementation of transportation and parking improvement projects. J. Provide bicycle facilities and sidewalks on new roads when feasible and in a manner consistent with the context and needs of the area. K. Ensure that additional through lanes are not installed at the expense of bicycle lanes, sidewalks, or landscaping. L. Design intersections to minimize conflicts between motorized vehicles and the more vulnerable roadway users, such as pedestrians and bicyclists. M. Consider pedestrians and bicyclists when designing road surfaces, curbs, crossings, signage, landscaping, signals, and sight lines. N. In new commercial development, provide for direct, clearly delineated, and preferably landscaped pedestrian walkways from transit stops and parking areas to building entries, and avoid placement of uses (such as drive-through facilities) in locations that would obstruct pedestrian pathways.
Goal 3 – Local transit within the City of Fontana is a viable choice for residents, easily accessible, and serving destinations throughout the City.	
• Maximize the accessibility, safety, convenience, and appeal of transit service and transit stops • Promote concentrated development patterns in coordination with transit planning to maximize service efficiency and ridership	A. Work with Omnitrans to improve service and expand service to underserved parts of Fontana. B. Use emerging technologies to expand and enhance traditional fixed-route/fixed-schedule transit service to include on-demand transit ride-sharing services and similar improvements. C. Support efforts to decrease wait times for local buses to a maximum of 15 minutes on heavily traveled corridors. D. Provide easy transit access to grocery stores, schools, health facilities, and other necessary destinations and services by public transportation.

Table 5.13-3 General Plan Update Goals, Policies, and Actions Community Mobility and Circulation Element

Goals & Policies	Actions
	E. Promote extending transit service to major commercial areas and major parks and community centers north of SR-210 in order to serve groups who may not have access to a car such as retail workers, senior citizens, and youth. F. Work with Metrolink and Omnitrans to enhance pedestrian and bicycle accessibility to stations and safety, comfort and convenience at transit stations and stops, as well as train crossings. G. Continue to work with Metrolink to increase safety at train crossings, including improving gate technology, grade separation, and signal coordination. H. Ensure that public transportation facilities are fully accessible to people with disabilities. I. Implement consistent design standards for transit shelters, benches, lighting, bicycle parking and other improvements for transit stops that are aesthetically pleasing and consistent with community character. J. Enhance way-finding signage along walkways to direct pedestrians to transit stops. K. Encourage the provision of amenities such as seating, lighting, and signage (including real-time arrival information) and bicycle parking areas at bus stops, shuttle stops and the Metrolink station to increase rider comfort, safety, and convenience. L. Support continued development and improvement of the Fontana Metrolink Station as an important transportation node for the City and access to regional destinations, and employment centers. M. Create a Bus Stop Master Plan to include bus shelters and other amenities and improvements for accessing and using bus stops. N. Explore the establishment of Quiet Zones to reduce train-horn noise at railroad crossings.

Table 5.13-3 General Plan Update Goals, Policies, and Actions Community Mobility and Circulation Element

Goals & Policies	Actions
Goal 4 – The neighborhood streets of Fontana maintain a residential character and support a range of transportation options.	
• Balance neighborhood traffic circulation needs with the goal of creating walkable and bike-friendly neighborhoods • Develop and implement Best Practice Street Design standards for new residential street development projects	A. Minimize noticeable increases in traffic from new development within existing residential neighborhoods through traffic mitigation measures. B. Implement traffic calming measures to slow traffic on local and collector streets in residential neighborhoods when supported by affected residents. C. Where sidewalks are directly adjacent to curbs and no planting strip exists, explore ways to add planting pockets with street trees to increase shade and reduce the apparent width of wide streets. D. To preserve connectivity, keep neighborhood streets open to all traffic movements unless there is a demonstrated safety or overwhelming cut-through traffic problem and there are no acceptable alternatives; or the street is a part of a designated bicycle boulevard.
Goal 5 – Fontana's commercial and mixed-use areas include a multi-functional street network that ensures a safe, comfortable, and efficient movement of people, goods, and services to support a high quality of life and economic vitality.	
• Provide a transportation network that is compatible with the needs of commerce and those who live, work, and shop in mixed-use areas • Encourage mixed use and commercial developments that support walking, bicycling, and public transit use while balancing the needs of motorized traffic to serve such developments	A. Maintain levels of service for passenger vehicles, transit vehicles, trucks, bicyclists, and pedestrians that are appropriate for the context of the area. B. Maximize available roadway capacity through technologies such as connected vehicle communication systems that link vehicles, the infrastructure, and personal communication devices. C. Implement access management techniques in commercial and mixed-use areas that allow for smooth traffic flow while creating a safe environment for non-motorized users. D. Optimize traffic flow through the use of coordinated and synchronized traffic signals. E. Integrate Complete Streets principles into street design guidelines for mixed-use and commercial areas. F. Encourage existing development and require new mixed-use and commercial development to create pedestrian and bicyclist connections within and between developments as an integral component of the site design.

Table 5.13-3 General Plan Update Goals, Policies, and Actions Community Mobility and Circulation Element

Goals & Policies	Actions
	G. Widen sidewalks where intensive commercial, recreational, or institutional activity is present, sidewalks are congested, where sidewalks are less than adequately wide to provide appropriate pedestrian amenities, or where residential densities are high. H. Require safe and convenient off-street bicycle parking as part of the approval process for new mixed use development.
Goal 6 – The City has attractive and convenient parking facilities, including electric charging stations, for both motorized and non-motorized vehicles that meet needs that fit the context.	
• Provide sufficient motor vehicle and secure bicycle parking in commercial and employment centers to support vibrant economic activity • Encourage approaches that reduce the overall number of new parking spaces that must be provided on-site for new development	A. Design vehicle parking to have multiple benefits. B. Design vehicle parking areas to reduce stormwater runoff, increase compatibility with street trees, and add visual interest to streets and other public locations. C. Where needed, design parking areas to include some spaces for oversize vehicles. D. Increase the number of electric vehicle charging stations in parking areas around the City. E. Update the Zoning Ordinance to require the installation of electric vehicle charging stations in new commercial, mixed-use, or multifamily developments over 20,000 square feet. F. Require installation of electric vehicle charging stations in existing non- residential, multifamily, or mixed-use developments over 25,000 square feet (or other suitable size threshold) when they seek permits for significant expansion. G. Establish electric vehicle charging stations at public sites such as community centers and other City facilities and encourage installation of charging stations at schools. H. Right-size parking requirements for non-residential and multifamily land uses to meet needs but avoid over- building parking. I. Review and evaluate required parking ratios to "right size" parking. J. Promote and organize shared parking agreements in downtown and other areas where there are adjacent underutilized private parking areas and complementary land uses. K. Discourage provision of parking above the minimum required.

Table 5.13-3 General Plan Update Goals, Policies, and Actions Community Mobility and Circulation Element

Goals & Policies	Actions
	L. Require safe and convenient off-street bicycle parking as part of the approval process for new development. M. Create public parking areas or, when feasible, a public parking structure downtown to provide a "park once" amenity for downtown visitors as part of the downtown revitalization program. N. Require shade strategies such as covered parking in parking lots or parking structures through the use of tree canopies or photovoltaic panel canopies.
Goal 7 – The City of Fontana participates in shaping regional transportation policies to reduce traffic congestion, pollution, and GHG emissions.	
• Lead and participate in initiatives to manage regional traffic • Coordinate with regional agencies and Caltrans to participate in regional efforts to maintain transportation infrastructure in Fontana • Participate in the efforts of the SCAG to coordinate transportation planning and services that support GHG reductions • Participate in the efforts by Caltrans to reduce congestion and improve traffic flow on area freeways	A. Use the City's annual Legislative Platform to define positions on regional and statewide transportation polices. B. Work with Metrolink and other regional transit providers to support efforts to expand the regional rail system to connect a greater number of Fontana residents and businesses with other cities and counties in Southern California. C. Collaborate with public interest groups, academic institutions, and local, state, and the federal government to study and advocate for transportation regulatory changes that meet the needs of Fontana residents and businesses. D. Support the adoption and use of technologies that reduce emissions from passenger and transit vehicles. E. Reduce GHG emissions associated with transportation by reducing VMT and per-mile emissions through use of vehicle technologies to meet the City's goals for GHG reductions by 2035.

Plan Consistency Analysis

The intent of the above Goals, Policies, and Actions, which is to connect neighborhoods and City destinations by expanding transportation choice, is consistent with current State planning practices as regulated by the California Complete Streets Act (AB 1358), the Sustainable Communities and Climate Protection Act (SB 375), the Global Warming Solutions Act (AB 32), and SB 743. Each of these state regulations seeks to reduce transportation's impact on the environment by increasing multi-modal travel and reducing the average distance needed to travel for common functions. Regional planning documents, such as the RTP-SCS and local planning documents, such as the City's ATP similarly seek reductions in the amount of travel made by single-occupant vehicles.

The General Plan Update is consistent with the RTP outlined in the RTP-SCS as well as the existing and planned pedestrian and bicycle facilities within the planning area as depicted in the City's recently adopted ATP. The RTP-SCS envisions that by 2040 the region is more compact and people live closer to work, school, shopping and other destinations. The RTP-SCS plans for people having more choices for travel and robust commerce. (SCAG 2016) The General Plan Update includes a specific policy specifying consistency with the RTP-SCS by stating "make land use decisions that support walking, bicycling, and public transit use, in alignment with the 2016-2040 RTP-SCS". The Plan concepts are consistent with the RTP-SCS concepts of Neighborhood Mobility Areas and Livable Corridors. These concepts are applied in the General Plan Update as "Connected Neighborhoods"; "i3" areas in the central part of the City; and mixed-use development along the central segments of Sierra Avenue, Foothill Boulevard, and Valley Boulevard to form Fontana's "Livable Corridors."

The City's ATP envisions the City of Fontana as a community where people of all ages and abilities can easily, comfortably, and safely walk or ride a bicycle, or use other mobility devices to access jobs, schools, public transit, shopping, and other destinations as a part of daily life. (Alta Planning + Design 2017). Policies in the General Plan update will result in future projects in the City, particularly commercial and residential, integrating with pedestrian and bicycle networks adjacent and nearby to project locations, and allocating the necessary space within project boundaries to accommodate this pedestrian and bicycle infrastructure. For example, a policy in the General Plan Update states to "(r)ely on the recently adopted ATP to guide the implementation of Complete Streets practices that improve transportation options for everyone—especially those who walk, bike and take transit."

Therefore, implementation of General Plan Goals, Policies and Actions and compliance with existing development regulations result in less than significant impacts to established State, regional, and ATP plans and policies.

Roadway Capacity Analysis

The analysis presented in the General Plan Update traffic study (Stantec 2017a) recognizes the interdependency between land use and circulation and analyzes the City's roadway system in that context. For the analysis, vehicle traffic generation estimates are calculated using the San Bernardino Transportation Analysis Model (SBTAM) based on the existing land uses in the City as well as the land uses associated with buildout of the City's current General Plan and the General Plan Update.

The SBTAM is a subregional model focusing on the San Bernardino County area and is based on the SCAG Version 5 (V5) regional travel demand forecasting model, which covers the entire southern California SCAG region. SBTAM is consistent with the SCAG V5 model structure, but with a more refined traffic analysis zone (TAZ) structure in San Bernardino County. Within the City of Fontana, the SBTAM TAZ structure is more refined than the City's prior 2003 General Plan model. SBTAM has been validated in accordance with the Federal Highway Administration (FHWA) and National Cooperative Highway Research Program (NCHRP) 255 guidelines. Comparisons of estimated to actual traffic volumes fall within acceptable local and industry standards as prescribed by NCHRP 255 guidelines (Parsons Brinkerhoff 2012).

SBTAM is calibrated to a 2012 baseline and produces forecasts of traffic volumes for a 2040 horizon year, consistent with the planning horizons used for RTPs. VMT data is likewise produced by the model for these 2012 and 2040 settings.

The General Plan is based on a 20-year planning horizon. For transportation planning purposes, the full amount of growth that would be allowable under the General Plan Update, which may take longer than 20-years to materialize, is applied to the SBTAM 2040 model to produce traffic volume and VMT estimates for General Plan buildout conditions. These estimates are referred to in this analysis as representing a 2040 horizon for consistency with RTP efforts.

Based on data from the SBTAM and the General Plan update, implementation of the General Plan Update could result in an additional 23,492 households and an additional 40,599 employees within the planning area in comparison to SBTAM estimates for 2012 (SBCTA 2016; Stantec 2017a). Of the additional dwelling units that would be allowed under the General Plan Update, most of those dwelling units would be medium and high density multi-family residential. Future uses within established Specific Plan areas would continue to be regulated primarily by the development standards established in each Specific Plan.

A summary of the 2040 growth estimates for the General Plan Update socioeconomic data and associated trip generation are shown in Table 5.13-4. As shown, ADT within the planning area is estimated to grow by around 47 percent between 2012 and 2040 (Stantec 2017a).

Table 5.13-4 2040 Growth Estimates

	Existing Conditions (SBTAM 2012)	2040 Conditions – Current General Plan	2040 Conditions – General Plan Update	Change (General Plan Update vs. Existing)
Population	239,839	281,339	315,852	76,013 (32%)
Employment	62,664	90,054	99,129	36,465 (58%)
Daily Total Trips	634,716	935,523	932,748	298,032 (47%)
Source: Fontana General Plan Update Traffic Analysis, Stantec 2017a				

To reduce dependency on the automobile, the General Plan Update adds two new Walkable Mixed-Use (WMXU) land use definitions that are designed to promote pedestrian- and bicycle-friendly development, increase housing diversity, increase transit use, and ensure economic vitality in the downtown and along important corridors. The WMXU definitions encourage infill development on vacant parcels and enhance community character. WMXU is proposed to provide flexibility in zoning and development in the following geographic areas:

- Fontana's downtown and on vacant and underutilized lots in adjacent areas
- Along the Sierra Avenue and Foothill Boulevard corridors
- Along Valley Boulevard around the intersection with Sierra Avenue
- At and near key intersections where new housing development could be designed to allow safe and convenient walking to nearby shopping or neighborhood destinations like schools and parks

The "walkable" meaning of this land use category is that it is structured by the walking distance radius from destinations like the civic center, downtown attractions, shopping and restaurants, the proposed BRT stops, and neighborhood destinations. It is based on the principal that generally the maximum distance people prefer to walk on a regular basis is ½ mile or ten minutes—if they experience the walk as safe, comfortable, and convenient.

The WMXU-1 definition is organized around walking access to downtown and along Fontana's three underutilized corridors: Foothill Boulevard, Sierra Avenue within Central Fontana, and Valley Boulevard centered around the Sierra Avenue intersection. This land use category provides the opportunity for a combination of commercial development and well-designed multi-family housing to support that development. The mixture of uses can be "vertical" – housing or offices above ground floor commercial development – or "horizontal," where housing and commercial uses could be located adjacent to one another. Zoning consistent with the purpose of WMXU-1 would include design requirements for a compatible mixture of uses and densities in this area and would ensure that a proper transition in density occurs adjacent to streets with single-family houses.

The WMXU-2 definition is for new neighborhoods to facilitate walking to shopping (which may be part of a development) or to destinations like parks and schools within walking distance. These areas will use design strategies rather than walls to connect to streets and adjacent development. The neighborhoods can also have a mixture of housing densities and open spaces, so that there are appropriate transitions between different housing types such as multi-family, townhouses, single-family houses, and commercial areas.

Year 2040 ADT volumes on the arterial highway plan are illustrated in Figure 5.13-4 for conditions based on the City's current General Plan, and in Figure 5.13-5 based on the General Plan Update. The 2040 traffic volumes are derived using SBTAM based on the socioeconomic data forecasts described above. Trips are estimated based on the amount of socioeconomic data and the corresponding SBTAM generation rates, with adjustments applied to the walkable mixed-use areas to reflect reduced vehicle trip characteristics of those neighborhood types as discussed above. The ADT volumes shown for conditions with General Plan Update are derived from SBTAM which does not incorporate the reductions expected by the application of the General Plan Goals and Policies discussed above, and therefore likely overstate the volume of traffic for that setting.

The 2040 ADT volumes presented here, together with roadway capacities that are based on each facility's classification, are used to determine the V/C ratios for the City's arterial system. The Fontana General Plan Update Traffic Analysis (Stantec 2017a), lists the year-2040 ADT estimates and the corresponding V/C ratios for the major, primary, and secondary highways and collector streets (Hierarchy of Streets Plan roadways) within the City based on both the current General Plan and the General Plan Update.

The City's current General Plan states that LOS "C" is desirable wherever feasible. In many cases achieving LOS "C" in a built environment would require extensive roadway widening that affects existing development, worsens conditions for pedestrians and bicyclists, and includes substantial cost. In those cases, the City recognizes that a worse LOS is acceptable.

CEQA analysis is in a transition period where the State is transitioning from LOS to VMT as the metric used for assessing significant impacts. Cities will be able to use LOS for planning purposes, but LOS will not be a significant impact under CEQA after new guidelines are adopted. The new CEQA guidelines are anticipated to be adopted by the State in 2018, and Cities are expected to be given until January 1, 2020 to adopt new thresholds of significance based on VMT. Since the State has not adopted the new CEQA guidelines as of this time, this EIR continues to use LOS as the criteria for significance and presents VMT info for informational purposes.

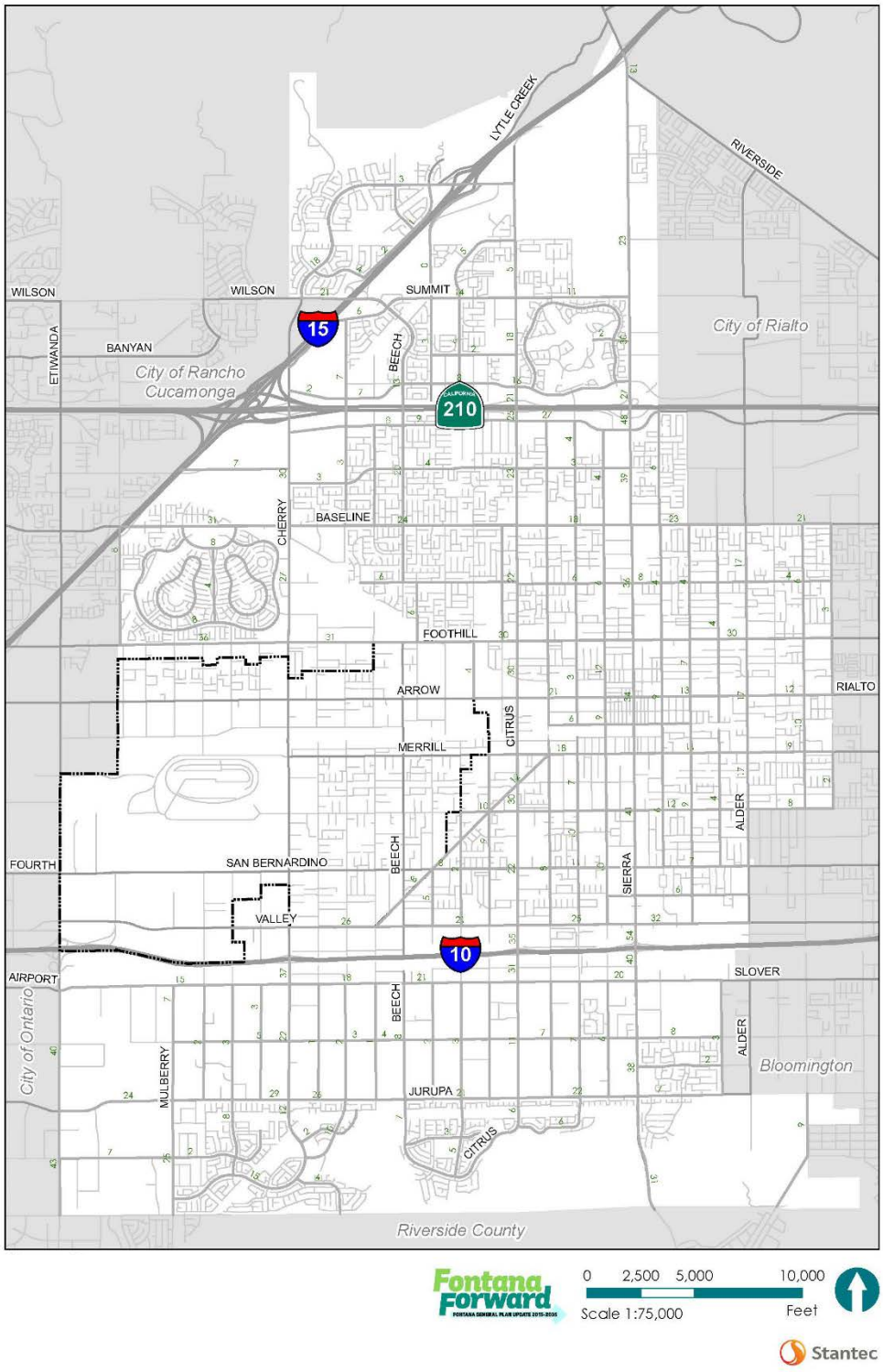


Figure 5.13-4 Current General Plan 2040 ADT Volumes

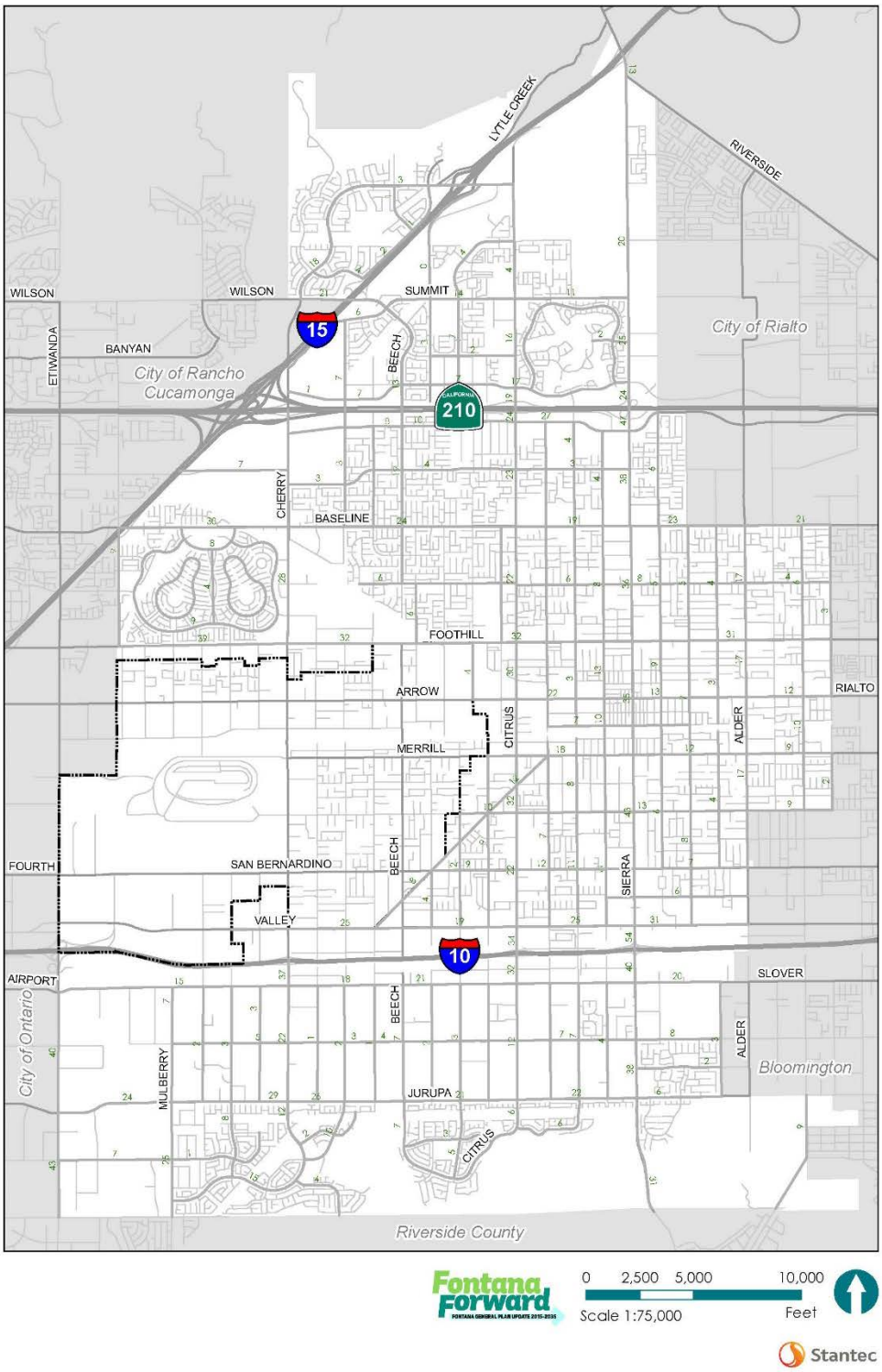


Figure 5.13-5 General Plan Update 2040 ADT Volumes

The threshold of significance applied for this analysis is consistent with the City's current General Plan, which recognizes that LOS "C" is desirable but not always feasible and is also consistent with the General Plan Update which includes Goals, Policies and Actions establishing a balanced approach to maintaining vehicular LOS, but not at the expense of other travel modes such as walking and biking. The threshold of significance used to evaluate vehicular traffic conditions under the General Plan Update is based on maintaining LOS "C", "D", or better when deemed appropriate, and maintaining LOS "E" or better in all cases.

Table 5.13-5 lists each location where conditions are forecast to exceed LOS "C" based on growth associated with the General Plan. LOS is calculated based on the current General Plan as well as based on the General Plan Update. LOS is shown given the existing roadway lanes and also based on buildout of the roadways in accordance to their General Plan functional classifications, as shown previously in the City's Hierarchy of Streets Plan provided in Figure 5.13-2.

Table 5.13-5 Roadway Locations Exceeding LOS "C"

Roadway Segment	V/C and LOS				
		Current General Plan		General Plan Update	
	2017	Existing Lanes	General Plan Lanes	Existing Lanes	General Plan Lanes
Segments Not Built-out To Their Hierarchy of Streets Plan Designation					
7. Arrow btwn Almeria & Sierra	0.70 (B)	0.88 (D)	0.58 (A)	0.92 (E)	0.61 (B)
65. Etiwanda btwn Jurupa & Slover	0.86 (D)	**1.11 (F)**	0.74 (C)	**1.11 (F)**	0.74 (C)
66. Etiwanda btwn Philadelphia & Jurupa	0.58 (A)	0.96 (E)	0.80 (C)	0.96 (E)	0.80 (C)
68. Fontana btwn Poplar & Merrill	0.48 (A)	1.00 (E)	0.33 (A)	1.00 (E)	0.33 (A)
115. Mulberry btwn Philadelphia & Jurupa	0.84 (D)	**1.04 (F)**	0.46 (A)	**1.04 (F)**	0.46 (A)
145. Sierra btwn Summit & Riverside	0.97 (E)	**1.92 (F)**	0.43 (A)	**1.67 (F)**	0.37 (A)
148. Sierra btwn SR-120 & Highland	0.77 (C)	**1.07 (F)**	0.67 (B)	**1.04 (F)**	0.65 (B)
150. Sierra btwn Foothill & Baseline	0.98 (E)	**1.50 (F)**	0.67 (B)	**1.50 (F)**	0.67 (B)
151. Sierra btwn Merrill & Foothill	0.55 (A)	0.94 (E)	0.63 (B)	0.97 (E)	0.65 (B)
152. Sierra btwn Valley & Merrill	0.85 (D)	**1.14 (F)**	0.76 (C)	**1.19 (F)**	0.80 (C)
153. Sierra btwn Valley & I-10	0.96 (E)	1.00 (E)	0.75 (C)	1.00 (E)	0.75 (C)
169. S. Highland btwn Beech & Citrus	0.40 (A)	**1.13 (F)**	0.75 (C)	**1.13 (F)**	0.75 (C)
173. Summit btwn Sierra & Citrus	0.58 (A)	0.92 (E)	0.46 (A)	0.92 (E)	0.46 (A)

Table 5.13-5 Roadway Locations Exceeding LOS "C"

Roadway Segment	V/C and LOS				
		Current General Plan		General Plan Update	
	2017	Existing Lanes	General Plan Lanes	Existing Lanes	General Plan Lanes
Segments Currently Built-out To Their Hierarchy of Streets Plan Designation					
39. Citrus btwn Foothill & Baseline	0.95 (E)	0.92 (E)	0.92 (E)	0.92 (E)	0.92 (E)
40. Citrus btwn Arrow & Foothill	0.97 (E)	**1.25 (F)**	**1.25 (F)**	**1.25 (F)**	**1.25 (F)**
41. Citrus btwn Randall & Arrow	0.94 (E)	0.83 (D)	0.83 (D)	0.89 (D)	0.89 (D)
42. Citrus btwn Valley & Randall	0.91 (E)	0.92 (E)	0.92 (E)	0.92 (E)	0.92 (E)
55. Cypress btwn Valley & Randall	0.91 (E)	0.83 (D)	0.83 (D)	0.92 (E)	0.92 (E)
80. Juniper btwn Valley & Randall	0.65 (B)	0.83 (D)	0.83 (D)	0.92 (E)	0.92 (E)
Bold = Location exceeding LOS "E" (Significant Impact)					
Source: Fontana General Plan Update Traffic Analysis, Stantec 2017a					

In each case where LOS "C" is exceeded based on the existing roadway lanes and the roadway segment is not built-out in accordance with the Hierarchy of Streets Plan, the Plan roadway configuration results in conditions of LOS "C" or better. For those locations where roadways are currently built to their maximum functional classification, it would not be feasible to expand the roadways to provide additional capacity. In each case, all locations except the following are forecast to operate no worse than LOS "E":

- Citrus Avenue between Arrow Boulevard and Foothill Boulevard

Citrus Avenue between Arrow Boulevard and Foothill Boulevard is currently operating at approximately 97 percent of its capacity (LOS "E"). Citrus Avenue is designated as a Secondary Highway at this location. It is currently constructed as a four-lane roadway with center turn lanes present at key intersections, consistent with its Plan designation. Citrus Avenue does not have bike lanes and is lacking sidewalks at several locations along the west side of the roadway.

With a theoretical maximum capacity of 24,000 ADT, current traffic volumes in this segment of Citrus Avenue are approximately 23,000 ADT and forecast year-2040 buildout traffic volumes are estimated to increase to approximately 30,000 ADT with either the current General Plan or the General Plan Update. This increase in traffic volume represents a significant impact based on the threshold of significance when compared to existing conditions. In comparison to the current General Plan, the General Plan Update does not significantly increase the volume of traffic on this segment of roadway.

This segment of Citrus Avenue is primarily residential in character, with retail commercial centers at both the Foothill Boulevard and the Arrow Boulevard intersections. Roadway modifications to add additional capacity by means of widening the roadway to provide additional vehicles lanes would be inconsistent with the General Plan Update goals and policies for this type of neighborhood.

Potential traffic calming and complete street improvements could be applied to Citrus Avenue between Foothill Boulevard and Arrow Boulevard to promote the use of non-vehicular travel and potentially decrease traffic volumes along this corridor. This segment of Citrus Avenue has been identified in the City's ATP for the provision of a Class II bike lane. The roadway could also be modified by prohibiting on-street parking and constructing a raised median to increase the roadway's vehicular capacity, thereby improving the roadway LOS.

Roadway VMT Analysis

Estimates of VMT produced by development in the City of Fontana and its sphere of influence area have been derived using the SBTAM for conditions based on the current General Plan and for conditions based on the General Plan Update. This information is being provided for consistency with the proposed new CEQA guidelines (pending adoption by the State and subsequently the City).

As discussed above, the WMU areas facilitate walking and biking trips more so than the development types present in other parts of the City. Research has shown that diverse mixed-use areas capture a large share of trips internally, reducing their traffic impacts relative to conventional suburban developments, and walkable mixed-use development with good transit access will generate significant shares of walk and transit trips, and will also generate shorter vehicle trips (Ewing et al. 2008). From this research it was determined that, on average, 29 percent of the trips generated by mixed-use development puts no strain on the external street network. Other research has estimated that well planned mixed-use development will increase walking, bicycling and transit usage, and can reduce vehicular travel by factors of 20 to 40 percent (Victoria Transport Institute 2011).

For modeling purposes, for the proposed General Plan WMU areas only, a conservative vehicle trip reduction factor of 10 percent is applied to the SBTAM trip generation estimates to reflect the higher amounts of walking and biking trips occurring in the designated WMU areas. The resulting data, summarized in Table 5.13-6, indicates that the SBTAM estimates that both the current General Plan and the General Plan Update result in more daily trips, more VMT, and higher VMT per capita when compared to existing conditions. However, the SBTAM data also indicates that the General Plan Update results in fewer trips and less total VMT in comparison to the current General Plan. The proposed General Plan also results in approximately 19 percent lower VMT per capita in comparison to the current General Plan (28.1 vs. 34.7) based on the SBTAM data.

Table 5.13-6 VMT Summary

	Existing Conditions (SBTAM 2012)	2040 Conditions – Current General Plan	2040 Conditions – General Plan Update	Change (Update General Plan vs. Existing)
Daily Total Trips	634,716	935,523	932,748	298,032 (47%)
Daily Total VMT	8,835,637	12,880,405	11,679,397	2,843,760 (32%)
Daily VMT per Capita	29.2	34.7	28.1	-1.1 (-3.8%)
Source: Fontana General Plan Update Traffic Analysis, Stantec 2017a				

The General Plan Update reduces VMT per capita consistent with State goals outlined in SB 743 and in the pending CEQA revisions. By reducing the amount of travel on a per capita basis, the General Plan Update is consistent with current State policy and would have a less than significant impact on State and local highways.

Significance of Impact

As discussed in the Impact Analysis section above, the General Plan Update would result in a less than significant impact in respect to consistency with other planning documents.

Based on the analysis of vehicular traffic, the General Plan Update would result in potentially significant impacts to the traffic and transportation network as ADT would exceed an established LOS threshold at the following location, which is forecast to operate at LOS "F" under General Plan buildout conditions:

- Citrus Avenue between Arrow Boulevard and Foothill Boulevard

To reduce traffic volumes on this roadway, potential traffic calming and complete street improvements could be applied to promote the use of non-vehicular travel. This segment of Citrus Avenue has been identified in the City's ATP for the provision of a Class II bike lane. The roadway could also be modified by prohibiting on-street parking and constructing a raised median to increase the roadway's vehicular capacity, thereby improving the roadway LOS. With the implementation of the mitigation measure identified below (MM-TRA-1), consisting of traffic calming treatments to reduce traffic volumes and/or an increase in vehicular capacity obtained by constructing a raised median, the impact to this segment of Citrus Avenue would be less than significant.

B. Would the project conflict with an applicable CMP, including, but not limited to, LOS standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Impact Analysis

The CMP was enacted by Proposition 111 with the intent to provide the analytical basis for transportation decisions through the STIP process, a multi-year 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 San Bernardino County CMP, published and periodically updated by the SBCTA, defines a network of state highways and arterials in the county and provides guidelines regarding LOS standards, impact criteria, and a process for mitigation of impacts on CMP facilities in the county. The minimum acceptable LOS for CMP facilities is defined as LOS "E", with certain exceptions. The San Bernardino County CMP was last updated in 2016. Local jurisdictions are required to have consistency between their General Plan Circulation Element and the CMP roadway system.

The City's Hierarchy of Streets Plan (refer to Figure 5.13-2, above) as presented in the Community Mobility and Circulation Element of the General Plan Update (Stantec 2017b) specifies the roadway classifications for each arterial roadway in the City. No changes to the classifications of the City's roadways are proposed as part of the General Plan update, thereby maintaining consistency with the CMP roadway system.

San Bernardino CMP roadways within the City consist of the following:

- Etiwanda Avenue
- Mulberry Avenue
- Cherry Avenue
- Citrus Avenue
- Sierra Avenue
- Alder Avenue
- Baseline Avenue
- Foothill Boulevard
- Jurupa Avenue

The traffic analysis presented in the prior sections shows that Citrus Avenue would exceed the CMP threshold of LOS "E". The remaining CMP roadways within the City of Fontana are forecast to operate equal to or less than the CMP threshold of LOS "E".

Significance of Impact

Citrus Avenue exceeds the San Bernardino CMP threshold of LOS "E", resulting in a significant impact based on the CMP criteria to maintain LOS "E" or better. As discussed in the previous section, with the implementation of MM-TRA-1 below, consisting of traffic calming treatments to reduce traffic volumes and/or an increase in vehicular capacity obtained by constructing a raised median, the impact to this segment of Citrus Avenue would be less than significant.

C. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks

Impact Analysis

There are no airports within the City. The General Plan Update would not result in the development of a new airport within the city, or throughout San Bernardino County, nor will it introduce new land uses that could prevent safety hazards to air traffic. There are no components of the General Plan that directly apply to air traffic patterns. Impacts from changes in air traffic patterns will be controlled by compliance with applicable federal, state, and local regulations.

Should new helipads or heliports be proposed in the future within the planning area, such developments would be required to be submitted through the City to the County of San Bernardino for review and action. While not anticipated, any future helipad or heliport project must comply with the State permit procedure provided by law and with all conditions of approval imposed or recommended by the Federal Aviation Administration (FAA), by the County of San Bernardino, and by Caltrans/Division of Aeronautics, in addition to any other local requirements.

Significance of Impact

The General Plan Update will result in a less than significant impact due to a change in air traffic patterns.

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

Impact Analysis

Hazards are defined as changes to circulation patterns that could result in unsafe driving or pedestrian conditions. Examples include inadequate vision or stopping distance, sharp roadway curves where there is an inability to see oncoming traffic, or vehicular/pedestrian traffic conflicts. Future projects under the General Plan Update would not substantially increase hazards due to design features or incompatible uses and would not introduce design features incompatible with current circulation patterns.

The Community Mobility and Circulation Element of the General Plan Update contains descriptions of street sections that would be implemented, providing safe street design as well as an aesthetic streetscape. City design standards conform with State roadway design manuals and are not changed by the General Plan Update. These standards include appropriate roadway widths, medians, bicycle lanes and other improvements consistent with the designated roadway functional classifications and provide for safe streets. Hazards due to roadway design features will be evaluated on a project-by-project basis as the buildout of the Hierarchy of Streets Plan occurs along with new development identified by the General Plan Update occurs.

The City periodically monitors LOS, traffic accident patterns, and physical conditions of the existing street system, and makes improvements to roadways as needed. Additionally, the City requires development projects to provide circulation improvements to achieve stated City goals and to mitigate to the maximum extent feasible traffic impacts to adjacent land uses and neighborhoods as well as vehicular conflicts related to a project.

There are no components of the General Plan Update that directly apply to hazards due to design features or incompatible uses. Impacts from design features or incompatible uses will be controlled by compliance with applicable federal, state, and local regulations.

Significance of Impact

The General Plan Update will result in a less than significant impact due to traffic hazards from a design feature or incompatible uses from implementation of the General Plan Update.

E. Result in inadequate emergency access

Impact Analysis

Inadequate emergency access can delay or prevent responders from arriving at an emergency location, thereby exacerbating an emergency situation leading to an increase potential loss of life and property. Future development will be subject to the provisions of the City's Fire Code with regard to providing adequate emergency access. The General Plan Update does not include policies that would change standards related to emergency access, nor would it interfere with policy implementation.

Significance of Impact

The General Plan Update will result in a less than significant impact to emergency access due to implementation of the General Plan Update.

F. Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance of safety of such facilities

Impact Analysis

Bus transit service within the City is provided by Omnitrans and by the VVTA, which provides bus access to the Victor Valley area. Omnitrans also provides the Access ADA Service, which provides curb-to-curb service for those unable to utilize the fixed-route service.

Commuter rail service is provided by the SCRRA regional Metrolink service, which provides passenger rail service to the surrounding Counties. A Metrolink station is located in downtown Fontana.

The City of Fontana ATP was approved in 2017. This plan details the existing active transportation (bicycle and pedestrian) network and also offers many future improvements which will enhance this network while simultaneously supporting the General Plan Update goals and policies. The ATP contains recommendations for future projects that will enhance the existing bicycle and pedestrian network. Many of the improvements will close gaps in the current network, while some of the projects improve upon current facilities to increase safety for pedestrians and cyclists. The ATP includes recommendations for 9 miles of shared-use pathways (Class I), 37 miles of bike lanes (Class II), 18 miles of bike routes/neighborhood greenways (Class III), and 5 miles of separated bikeways (Class IV) and thereby addresses the City's goal of becoming a community that is healthy, engaged, economically vibrant, family-oriented, and safe.

The Goals, Policies, and Actions of the General Plan Update have been formulated to supports the City's vision to take advantage of more transportation choices, to walk and bike to nearby parks, schools and stores, use transit and ride sharing, and drive longer distances as needed. The General Plan Update does not include policies that would reduce access to transit, pedestrian, or bicycle facilities, nor would it interfere with ATP policy implementation.

Significance of Impact

The General Plan Update will result in a less than significant impact to policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or performance of safety due to implementation of the General Plan Update.

5.13.5 Mitigation Measures

The following roadway improvements have been identified to reduce potentially significant impacts to traffic and the transportation network to a less than significant level. The location with recommended future improvements could be monitored over time, with improvements implemented when the LOS exceeds the performance standard.

MM-TRA-1 To mitigate the impact of additional traffic volumes on the segment of Citrus Avenue between Foothill Boulevard and Arrow Boulevard, roadway modifications to provide sidewalks where currently missing, the addition of Class II bicycle lanes in accordance with the City's ATP, and additional traffic calming measures as necessary to reduce traffic volumes to a level appropriate for the roadway's designation as a Secondary Highway will be constructed. Additionally, the roadway could be modified by removing on-street parking and constructing raised medians to increase the roadway's vehicular capacity.

The City utilizes a DIF, paid by new development as it occurs in the City, to fund projects such as the above mitigation measure.

Although significant transportation impacts will be mitigated to less than significant levels through implementation of the above mitigation measure, the following mitigation measures are considered as best practices to be applied to future projects as may be necessary to reduce

impacts to less than significant levels. This following list of mitigation measures is not all inclusive of mitigation measures that may be adopted for future projects but serve as a guide and performance standards that constitute the minimum level of measures to reduce environmental impacts to acceptable levels.

MM-TRA-2 Prior to the issuance of building permits, the project applicant shall participate in the City of Fontana's Development Impact Fee (DIF) program by paying the requisite DIF fee at the time of the building permit.

The Measure I fee program relies upon local jurisdictions to implement mitigation programs by collecting fees for regional improvements; however, the San Bernardino County Transportation Authority (SBCTA) does not dictate how individual jurisdictions allocate their costs for regional improvements to new development. Instead, each jurisdiction, including the City of Fontana, is required to develop its own schedule of fees and implementation programs (often through a capital improvement program (CIP)) that can demonstrate achievement of contribution levels set in the Nexus Study for each jurisdiction.

The Nexus study is based on having each jurisdiction subject to the Nexus Study fund its share of needed regional improvements by developing the facilities within its own jurisdiction. The Nexus Study does not rely on the exchange of impact fees between jurisdictions as a means of mitigating impacts of development occurring within one jurisdiction on the regional transportation facilities of another jurisdiction. As a result, there is no allocation of arterial improvement costs to jurisdictions outside the jurisdiction in which proposed development project is located. Impacts of development throughout the region addressed in the Nexus Study are instead mitigated by requiring each jurisdiction to be responsible for needed arterial improvements within its own jurisdiction, including the share of improvements in traffic generated in other jurisdictions. Thus, as development occurs within the various jurisdictions subject to Nexus Study fees, all of the regional improvements included within the Nexus Study throughout the County of San Bernardino will eventually be built

MM-TRA-3 Prior to issuance of a grading permit, applicants for future development associated with proposed projects shall prepare site-specific traffic studies, to the satisfaction of the City's Engineering Department. As determined by these subsequent traffic studies, traffic improvements identified as mitigation measures shall be implemented as a condition of the approved future development project, either through direct construction by the project applicant and/or through development impact fees.

MM-TRA-4 The City of Fontana shall perform monitoring of traffic generation and phasing of development within the project area to defer or eliminate identified improvements due to potential circulation impact changes or reduced land use intensities. This monitoring shall be achieved through project-specific traffic studies tied to future development within the Specific Plan Update area with land use in excess of 100,000 square feet of non-residential land use.

5.13.6 References

Alta Planning + Design. 2017. City of Fontana Active Transportation Plan, 2017.

Ewing, R. et al. 2008. Traffic Generated by Mixed-Use Developments – A Six-Region Study Using Consistent Built Environmental Measures. Paper Presented at 87th Meeting of the Transportation Research Board, January, 2008.

City of Fontana 2003. General Plan

OPR (Governor's Office of Planning and Research). 2010. Update to the General Plan Guidelines: Complete Streets and the Circulation Element, December 15, 2010.

Parsons Brinkerhoff, San Bernardino County Transportation Analysis Model – SBTAM Model Development and Validation Report and User's Guide, December, 2012

SANBAG. 2012. San Bernardino County Transportation Analysis Model – SBTAM Model Development and Validation Report and User's Guide, December, 2012

SANBAG. 2016. San Bernardino County Congestion Management Program, June, 2016

San Bernardino County Transportation Authority (SBCTA) 2016. San Bernardino Transportation Analysis Model

Stantec. 2016. General Plan Update Background Report, April, 2016.

Stantec. 2017a. Fontana General Plan Update Traffic Analysis, November 8, 2017.

Stantec. 2017b. Transportation and Connectivity Best Practices White Paper, May, 2017.

Victoria Transport Institute. 2011. Land Use Impacts on Transport, How Land Use Factors Affect Travel Behavior, 2011.

SCAG. 2016. The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, April, 2016.

6.0 ALTERNATIVES

6.1 INTRODUCTION

Section 15126.6(a) of the *California Environmental Quality Act* (CEQA) Guidelines requires the identification and comparative evaluation of a reasonable range of alternatives that would feasibly achieve most of the objectives (see Section 2.5 for a list of project objectives) of the proposed project, while lessening significant environmental effects. This chapter evaluates two alternatives to the proposed project to accommodate the anticipated growth of the City as described in Land Use / Transportation Briefing Book prepared by the City as part of the General Plan Update planning process (Appendix G).

There are two alternatives discussed in this chapter – the No Project Alternative and the Compact Scenario Alternative. While each alternative accommodates the forecasted growth in a different pattern, both have the capacity to accommodate the City's growth of new residential units and employment opportunities through the end of the planning horizon. Neither alternative proposes expansion into the Sphere of Influence to accommodate the forecasted growth.

Findings rejecting alternatives are required only if one or more significant environmental effects will not be avoided or substantially lessened by mitigation measures. An agency need not make findings rejecting alternatives described in the EIR if all of the project's significant impacts will be avoided or substantially lessened by mitigation measures. An agency need make only one or more of the findings listed in Public Resource Code §21081(a) for each significant impact, so if it makes a mitigation finding for each significant impact, no further findings are required. (See Public Resources Code §21081(a)(1)–(2); CEQA Guidelines §15091(a)(1)–(2).) No significant unmitigable impacts would result from the General Plan Update; therefore, the City is not required to make findings rejecting alternatives analyzed in the EIR. Likewise, because mitigation measures proposed in the EIR reduce impacts to less than significant levels, the City is not required to make findings on the feasibility of alternatives analyzed in the EIR.

In *Laurel Hills Homeowners Ass'n v. City Council* (1978) 83 Cal.App.3d 515, the court held that, if mitigation measures substantially lessen a project's significant environmental effects, the lead agency may approve the project without making findings on the feasibility of the EIR's project alternatives. Noting that mitigation measures and project alternatives are mentioned in Public Resources Code §§21002–21002.1 in the alternative, the court concluded that CEQA does not mandate the choice of the environmentally most desirable project if, through mitigation measures alone, the agency has reduced the project's environmental effects to an acceptable level. (*Laurel Hills*, *supra*, 83 Cal.App.3rd at 521; see also *Stevens v. City of Glendale* (1981) 125 Cal.3rd 986, 996; *No Slo Transit, Inc. v. City of Long Beach* (1987) 197 Cal.App.3rd 241.)

In *Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.* (1988) 47 Cal.3rd 376, 402, the California Supreme Court noted with approval the holding in *Laurel Hills* that CEQA does not require an agency to consider an environmentally superior alternative when approving a project if mitigation measures will substantially reduce environmental impacts. (See also *Rio Vista Farm Bureau Ctr. v. County of Solano* (1992) 5 Cal.App.4th 351, 379 [agency is not required to make findings on feasibility of EIR's alternatives if mitigation measures will reduce environmental impacts to acceptable levels].)

Thus, when an agency finds that significant adverse effects will be avoided or substantially lessened by mitigation measures, it need not make findings that environmentally superior alternatives are infeasible. (See *Mira Mar Mobile Community v. City of Oceanside* (2004) 119 Cal.App.4th 477; *Protect Our Water v. County of Merced* (2003) 110 Cal.App.4th 362, 373; *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3rd 692.)

6.2 NO PROJECT ALTERNATIVE

6.2.1 Description

The No Project alternative assumes that no new land uses would be added to the Project area. For the purpose of this environmental impact report (EIR), this alternative assumes that the proposed General Plan Update would not be adopted and implemented. Instead, the planning area would continue to be developed according to the existing General Plan and in accordance with current City policies.

Refer to Table 6.2-1 for a comparison of the No Project Alternative versus the General Plan Update.

Table 6.2-1 No Project Alternative Comparison with General Plan Update

Type	No Project Alternative	General Plan Update
Growth forecast to 2036 (number of households)	70,560	70,560
Development potential (number of households)	74,010	81,760
Employment potential (number of jobs)	90,054	99,129
Daily Total Trips (number)	935,523	932,748
Daily Total vehicle miles traveled (miles)	12,880,405	12,750,434
Daily vehicle miles traveled per capita (miles)	34.7	30.7
Mobility and transportation	No change	Increase in walkable neighborhoods and transit oriented development
Air quality	No change	Improved due to lower per capita vehicle miles traveled

6.2.2 Impact Evaluation

The San Bernardino Transportation Analysis Model (SBTAM) was used to validate the No Project Alternative. The model's results demonstrated that the development potential of the No Project Alternative could accommodate the City's forecasted growth. Furthermore, the model's results demonstrated that the traffic generated by the No Project Alternative is consistent with the growth projections of the SBTAM. However, the General Plan Update reduces the amount of vehicle-miles-traveled by Fontana residents and workers by approximately 11%, in comparison to the No Project Alternative. The General Plan Update also improves air quality in comparison to the No Project Alternative due to a reduction in vehicular emissions as a result of fewer vehicle miles traveled. While vehicle miles traveled under the No Project Alternative would be greater than that of the General Plan Update, the impact to transportation and circulation nonetheless would be less than significant, because no changes to circulation and land use under this alternative are proposed. Remaining environmental impacts of the No Project alternative would be similar to those identified for the General Plan Update.

6.2.3 Conclusion

Under the No Project Alternative, development would continue as planned under the 2003 General Plan. This alternative would allow for land uses consistent with the existing character of the City and would continue to provide sufficient infrastructure to meet demand. However, the No Project alternative does not fulfill all the goals stated in the General Plan Update, nor does it include key policies, actions, and land use changes (e.g., new mixed-use land use designations) that act as a catalyst to create more livable, walkable neighborhoods; spur investment; create employment opportunities; revitalize the downtown core; promote green practices; and produce a range of housing types in the City. While the No Project Alternative represents the current adopted General Plan and is therefore feasible, the No Project alternative does not provide an updated planning framework for the current and future needs of the City nor does it meet the goals and objectives for future growth and development of the City as envisioned in the General Plan Update.

6.3 COMPACT SCENARIO ALTERNATIVE

6.3.1 Description

This alternative is a variation of the proposed Project, with higher residential density within walking distance of existing and proposed mass transit stations.

Under the Compact Scenario Alternative, the walkable mixed-use downtown and corridors (WMXU-1) maximum density is increased to 50 dwelling units per acre (du/ac) and a floor area ratio (FAR) of 3.0 FAR to offer an environmentally superior alternative to the General Plan Update. (Under the General Plan Update, the WMXU-1 density range is 3.0-39.0 du/ac and has a 0.2-2.0 FAR.) As such, the Compact Scenario Alternative represents an additional increase in development potential due to allowable higher density development. While the Compact

Scenario is consistent with most of the objectives of the General Plan Update, the increase in density would not be consistent with the character of the existing land uses within the WMXU-1 area and surrounding areas.

As discussed in Chapter 5.9, WMXU-1 is organized around walking access to downtown and along Fontana's three underutilized corridors: Foothill Boulevard, Sierra Avenue within Central Fontana, and Valley Boulevard centered around the Sierra intersection. This land use category provides for a combination of commercial development and well-designed multi-family housing to support that development. The mixture of uses can be "vertical" – housing or offices above ground floor commercial development – or "horizontal," where housing and commercial uses could be located adjacent to one another. Zoning consistent with the purpose of WMXU-1 would include design requirements for a compatible mixture of uses and densities in this area, and would ensure that a proper transition in density occurs adjacent to streets with single-family houses.

6.3.2 Impact Evaluation

6.3.2.1 Air Quality

The proposed changes to land use under the Compact Scenario Alternative would be substantially similar to those outlined in the General Plan Update, with the exception of a higher density under WMXU-1 and an FAR of 3.0. However, as shown in Table 6.3-1, vehicle miles traveled (VMT) per capital would be less than VMT proposed under the General Plan Update. As such, air quality under the Compact Scenario Alternative would be improved due to lower per capital VMT. Construction activities that could impact air quality would be substantially similar to the General Plan Update, and impacts during construction would be addressed and mitigated, as warranted, on a project-specific basis. Therefore, impacts relative to air quality under the under the Compact Scenario Alternative would be less than significant and comparable to impacts identified for the General Plan Update.

Table 6.3-1 Compact Scenario Alternative Comparison with General Plan Update

Type	Compact Scenario Alternative	General Plan Update
Growth forecast to 2036 (number of households)	70,560	70,560
Development potential (number of households)	Greater than 81,760	81,760
Employment potential (number of jobs)	Greater than 99,129	99,129
Daily Total Trips (number)	Not modeled	932,748
Daily Total vehicle miles traveled (miles)	Not modeled	12,750,434
Daily vehicle miles traveled per capita* (miles)	Less than 30.7	30.7

Table 6.3-1 Compact Scenario Alternative Comparison with General Plan Update

Type	Compact Scenario Alternative	General Plan Update
Mobility and transportation	Increase in walkable neighborhoods and transit oriented development	Increase in walkable neighborhoods and transit oriented development
Air quality	Improved due to lower per capita vehicle miles traveled	Improved due to lower per capita vehicle miles traveled
NOTE: * Per capita estimate based on service population (defined as city population plus employment) and includes all trips (including truck trips) that begin or end at a location within Fontana.		

6.3.2.2 Biological Resources

Similar to the General Plan Update, construction-related activities under the Compact Scenario Alternative may include demolition, grading, materials laydown, access and infrastructure improvements, and building construction. These activities could result in the disturbance of nesting migratory species covered under the *Migratory Bird Treaty Act* (MBTA). Impacts to migratory birds would be addressed and mitigated, as necessary, on a site-by-site basis. Therefore, impacts to biological resources under the Compact Scenario Alternative would be less than significant and comparable to impacts identified for the General Plan Update.

6.3.2.3 Cultural Resources

Construction-related activities under the Compact Scenario Alternative would be the same as under the General Plan Update, including demolition, grading, materials laydown, access and infrastructure improvements, and building construction. Depths of construction activities, and requirements for subterranean ground investigation, would be similar and therefore would result in similar impacts to cultural resources as identified for the General Plan Update, particularly with regard to paleontological and archaeological resources. The potential for demolition of historic structures would remain substantially the same for the Compact Scenario Alternative as identified for the General Plan Update. Cultural resources are generally addressed on a site-by-site basis, and the probability of uncovering new resources or disturbing known resources is considered during project-level environmental review, including subsurface investigations (as warranted). As such, impacts to cultural resources under the Compact Scenario Alternative would be less than significant and comparable to impacts identified for the General Plan Update.

6.3.2.4 Geology, Soils, Seismicity, & Mineral Resources

Construction-related activities under the Compact Scenario Alternative would be the same as under the General Plan Update, including demolition, grading, access and infrastructure improvements, and building construction. Depths of construction activities, and requirements for subterranean ground investigation and development, would be similar and therefore would result in similar impacts to geology, soils, and seismicity as identified for the General Plan Update.

Due to the location of the City within a seismically active area, earthquake hazards would be of the same magnitude under the Compact Scenario Alternative as those identified for the General Plan Update. Other site-specific geological hazards associated with erosion, loss of topsoil, liquefaction, subsidence, landslides, and expansive soils would also be similar for the Compact Scenario Alternative as those identified for the General Plan Update. As presented in Table 6.3-1, development and employment potential under the Compact Scenario Alternative would be greater than that of the General Plan Update, potentially exposing more residents, employees, and structures to geologic hazards. However, new development under the Compact Scenario Alternative would be expected to conform to the most recent California Building Code (CBC), which includes strict building specifications to ensure structural and foundational stability. In addition, the City would continue to require preparation of a detailed, site-specific soils and geotechnical analysis for all future projects.

Therefore, impacts to geology, soils, and seismicity under the Compact Scenario Alternative would be less than significant and comparable to impacts identified for the General Plan Update.

6.3.2.5 Greenhouse Gas Emissions

Under the Compact Scenario, greenhouse gas (GHG) emissions would be substantially similar to those of the General Plan Update, and would occur as a result of construction equipment used for demolition, grading, paving, and building construction activities. GHG emissions would also result from worker and vendor trips to and from project sites and from demolition and soil hauling trips. Similar to the General Plan Update, construction activities would be short-term and would not emit GHGs upon completion (whereas operational emissions are continuous until operation of the use ceases). As indicated in Chapter 5.6, typically, construction-related GHG emissions contribute less than one percent to a project's annual greenhouse gas emissions inventory, and mitigation for construction-related emissions is not effective in reducing a project's overall contribution to climate change, given the relatively small size of total construction emissions. As such, short-term climate change impacts due to future construction activities would be less than significant and comparable to impacts identified for the General Plan Update.

Future development projects under the Compact Scenario Alternative would result in continuous GHG emissions from mobile, area, and operational sources. Mobile sources, including vehicle trips to and from development projects, will result primarily in emissions of carbon dioxide (CO_2), with minor emissions of methane (CH_4) and nitrous oxide (N_2O). The most

significant GHG emission from natural gas usage will be methane. Electricity usage by future development, and indirect usage of electricity for water and wastewater conveyance, will result primarily in emissions of carbon dioxide. Disposal of solid waste will result in emissions of methane from the decomposition of waste at landfills coupled with CO_2 emission from the handling and transport of solid waste. These sources combine to define the long-term greenhouse gas inventory for typical development projects.

The changes to land use patterns (i.e., new mixed-use land use designations) are anticipated to increase transit oriented development, thereby potentially further decreasing VMT and, in turn, GHG emissions in these new, more walkable neighborhoods under the Compact Scenario. As discussed in Chapter 5,6, implementation of the proposed General Plan Update including the 9% reduction in vehicle miles traveled achieved by the goals and policies of the General Plan Update, would result in a substantial net reduction in greenhouse gas emissions compared to the existing General Plan. Because GHG emissions impacts would be less than significant under the General Plan Update, impacts relative to GHG emissions under the under the Compact Scenario Alternative would be less than significant and comparable to impacts identified for the General Plan Update.

6.3.2.6 Hazards and Hazardous Materials

Implementation of the Compact Scenario Alternative would result in an increase in the number of households, thereby increasing the amount of household hazardous waste that could be generated that would require disposal under the Compact Scenario Alternative.

Activities during construction and operation of new development related to the routine transport, use, or disposal of hazardous materials, as well as those related to reasonably foreseeable upset conditions, would be substantially similar to those of the General Plan Update. Development under both the General Plan Update and the Compact Scenario Alternative would be required to comply with federal, state, and local regulations relative to the protection of people and the environment from exposure to hazards. Compliance with existing regulations related to hazardous materials under the Compact Scenario Alternative would reduce this impact to a less than significant level, similar to those identified for the General Plan Update.

6.3.2.7 Hydrology and Water Quality

The City is an urban area that is highly developed with residential, commercial, and industrial uses. Due to the existing levels of development, the impervious nature of the project area, and that neither the Compact Scenario Alternative nor the General Plan Update would disrupt existing open spaces, implementation of the Compact Scenario Alternative would have similar hydrology and water quality impacts relative to the General Plan Update.

Similar to the General Plan Update, surface runoff under the Compact Scenario Alternative would be subject to National Pollutant Discharge Elimination System (NPDES) permit standards. In addition, site-specific mitigation measures would be required for future development under the

Compact Scenario Alternative to reduce potential pollutant loads and sediment in runoff, and ensure that appropriate best management practices (BMPs) are employed and regulatory requirements are met. Therefore, the Compact Scenario Alternative would have a less than significant impact on hydrology and water quality, similar to impacts identified for the General Plan Update.

6.3.2.8 Land Use

The proposed changes to land use under the Compact Scenario Alternative would be substantially similar to those outlined in the General Plan Update, except that there would be greater development potential under the WMXU-1 designation, as described above. Proposed land use changes under the Compact Scenario Alternative would not divide an established community, since – like the General Plan Update – no specific construction project, development plan, or other land-altering activity would be authorized under this alternative. Additionally, the Compact Scenario Alternative, which proposes higher density development in currently urbanized areas, would not indirectly lead to the division of an established community, because land use changes would not trigger the development of major new infrastructure that could physically divide existing developed areas of the City. Furthermore, no land use changes are proposed under the Compact Scenario Alternative that would conflict with the North Fontana Multiple Species Habitat Conservation Plan (MSHCP), since no land use changes are proposed in affected areas. However, the increase in density would not be consistent with the character of the existing land uses within the WMXU-1 area and surrounding areas. Therefore, implementation of the Compact Scenario Alternative would result in significant impacts to land use when compared to the General Plan Update.

6.3.2.9 Noise

Land uses under the Compact Scenario Alternative would be substantially similar to those proposed under the General Plan Update, except that there would be greater development potential under the Compact Scenario Alternative. Sources of noise within the existing urban and developed planning area would remain substantially similar to existing conditions.

While there would be an increase in the number of households under the Compact Scenario Alternative, noise levels in residential areas would be expected to be substantially lower than those measured in commercial areas, which often have louder noise levels, particularly along major arterials. Like the General Plan Update, development under the Compact Scenario Alternative could expose sensitive receptors to elevated noise levels and strong vibration during construction; however, elevated noise and vibration would be addressed with appropriate mitigation on a project-specific basis. Therefore, the Compact Scenario Alternative would have a less than significant impact on noise, similar to impacts identified for the General Plan Update.

6.3.2.10 Population & Housing

Proposed land use changes under the Compact Scenario Alternative would be substantially similar to those outlined in the General Plan Update, except that there would be greater development potential under the Compact Scenario Alternative. As presented in Table 6.3-1, the Compact Scenario Alternative could result an increase in the number of households by 2036. Similar to the General Plan Update, the Compact Scenario Alternative would allow the projected population to be accommodated by protecting the existing housing stock and creating future housing opportunities. Therefore, the Compact Scenario Alternative would have a less than significant impact on population and housing.

6.3.2.11 Public Services, Utilities & Recreation

There would be greater development potential, and therefore a greater overall demand for public services and utilities under the Compact Scenario Alternative, as compared to the General Plan Update. However, as with the General Plan Update, it is anticipated that demand for services and utilities can be met as incremental development takes place through collection of fees and other funding mechanisms. Similar to the General Plan Update, future site-specific development under the Compact Scenario Alternative would require a capacity study of the affected infrastructure and mitigation measures to reduce any impacts. All future development would be required to adhere to existing laws and regulations, which will ensure that impacts are reduced to the extent feasible. As such, the Compact Scenario Alternative would result in a less than significant impact to public and utility services, although slightly more than those identified for the General Plan Update due to increased demand expected under the Compact Scenario Alternative.

The Compact Scenario Alternative would not result in the creation of any new recreational facilities. As such, the Compact Scenario Alternative would result in a less than significant impact, similar to that identified for the General Plan Update.

6.3.2.12 Transportation

Implementation of the Compact Scenario Alternative would result in a decrease in daily VMT per capita, compared to the General Plan Update (Table 6.3-1). The increase in walkable neighborhoods and transit oriented development anticipated under both the Compact Scenario Alternative and the General Plan Update would be substantially similar, except that there would be greater development potential with the WMXU-1 designation under the Compact Scenario Alternative. Similar to the General Plan Update, no changes to the circulation system (i.e., orientation of the City's streets) are proposed under the Compact Scenario Alternative. Therefore, the Compact Scenario Alternative would result in a less than significant impact, similar to that identified for the General Plan Update

6.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Based on the above analysis, there is no environmentally superior alternative to the General Plan Update. No significant unmitigable impacts would result from the General Plan Update; therefore, the City is not required to make findings rejecting alternatives analyzed in the EIR. Likewise, because mitigation measures proposed in the EIR reduce impacts to less than significant levels, the City is not required to make findings on the feasibility of alternatives analyzed in the EIR as discussed in Section 6.1.

7.0 OTHER CEQA CONSIDERATIONS

7.1 CUMULATIVE IMPACT ASSESSMENT

CEQA requires that an EIR examine cumulative impacts. As discussed in CEQA Guidelines Section 15130(a)(1), a cumulative impact "consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts." Furthermore, the analysis of cumulative impacts need not provide the level of detail required of the analysis of impacts from the project itself but shall "reflect the severity of the impacts and their likelihood of occurrence" (CEQA Guidelines Section 15130(b)).

In order to assess cumulative impacts, an EIR must analyze either a list of past, present, and probable future projects or a summary of projections contained in an adopted general plan or related planning document.

Projection Method. A summary of projections contained in an adopted general plan or related planning document or in a prior environmental document that has been adopted or certified, which described or evaluated regional or area wide 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 Projection Method serves as a guide to determine if the General Plan Update is consistent with the long-term population, employment, and household projections of the region. If the proposed General Plan Update is generally consistent with regional projections, then it would also generally be consistent with regional efforts to address environment problems such as air quality and traffic.

7.1.1 Aesthetics

The General Plan Update introduces two new walkable mix-use land use designations that could result in multiple-story structures. However, proposed General Plan Update policies, implementing zoning regulations, and established City design review practices would ensure that any new development would be consistent with the existing character of the neighborhoods.

Future development within the planning area would be subject to the policies of the proposed General Plan Update and existing development standards. This includes policies and programs that support preserving neighborhood character, promoting quality design, and minimizing lighting impacts. The proposed policies and programs would ensure that cumulative aesthetic effects would the not be cumulatively considerable when considered with past, current, and future probably projects.

7.1.2 Air Quality

The context for assessing cumulative air quality impacts is the South Coast Air Basin in terms of national and State criteria pollutant standards. The immediate vicinity of the City is the context for localized levels of criteria pollutants and toxic emissions. The proposed General Plan Update would not conflict with the regional AQMP prepared by SCAQMD. In addition, policies in the General Plan Update have been included to ensure that individual projects would be consistent with the AQMP, emission thresholds, and SCAQMD rules. Proposed mixed-use/residential incentive higher-density development policies would implement an important regional strategy to encourage more compact urban/infill development in areas with good access to transit, which helps reduce total vehicle trips and average trip distances. This would help reduce vehicle emissions. The City would continue to evaluate short-term, construction-related impacts and long-term impacts for discretionary land use projects so that best available control measures can be applied, where warranted, to minimize the effects of individual development projects. Thresholds recommended by the SCAQMD would continue to be the preferred criteria for determining the level of impact significance at the project level of review.

The proposed General Plan Update would not authorize any particular project or any exemptions from or conflicts with the AQMP and would not result in any direct air quality impacts. Impacts at the program level would not be significant. Therefore, long-term cumulative air quality impacts to the region would not be cumulatively considerable.

7.1.3 Biological Resources

The context for assessing cumulative impacts to biological resources includes sensitive species and their habitat throughout the City and adjacent areas. Future new development within the City, as would be changed by the General Plan Update, is restricted to infill properties. These properties have been and will continue to be designated for urban commercial use; the land use will not change until the landowners are ready to develop the lands. Since these lands have the potential to support burrowing owls, an owl assessment would have to be performed prior to development. If habitat is found, the landowner would have to mitigate any loss of habitat in accordance with requirements of the City's Multiple Habitat Species Conservation Plan (MSHCP) and the California Department of Fish and Wildlife.

To address the long-term, cumulative loss of sensitive habitat and associated species in the City, the City would continue to implement existing federal and State regulations related to species and habitat protection and conservation. Considering the proposed General Plan Update consistency with the existing federal and State regulations, the Project's contribution to the long-term loss of sensitive habitat and species would not be considerable. In particular, the General Plan Update provides for continued preservation and restoration of natural habitat and landforms. Therefore, the General Plan Update's contribution to the future loss of biological resources would not be cumulatively considerable.

7.1.4 Cultural Resources

Since the Planning Area is almost entirely built out and development consists of infill, the chance of exposing hidden cultural resources is remote. Additionally, the existing and proposed General Plan Update policies provide an ongoing program to ensure proper identification, evaluation, and recovery and/or protection of potentially important historical, archaeological, and paleontological resources that may be disturbed during future development activities. Existing State law requires immediate County Coroner notification upon discovery of human remains and also notification of affected Native American tribes if the remains are suspected to be of Native American origin. Surrounding jurisdictions are subject to similar regulations, including coroner notification upon discovery of human remains. Long-term development throughout Fontana has low potential to impact subsurface archaeological and/or paleontological remains.

With regard to historical properties, General Plan Update policies recognize the importance of preserving the City's heritage. With continued implementation of City policies and practices, the Project's contribution to the future loss of cultural resources would not be cumulatively considerable.

7.1.5 Geology, Soils, and Seismicity

Future development within the Planning Area would increase the number of people exposed to earthquake-induced ground-shaking and other seismically induced ground hazards, such as liquefaction. The context for assessing cumulative geologic impacts is regional, considering the majority of California is subject to some type of geologic hazard. The specific types and extent of geologic hazards and constraints are due to localized conditions that are routinely addressed at the project-level of analysis. The proposed General Plan Update includes policies related to risk management from natural disasters. Therefore, cumulative geologic hazards impacts would not be cumulatively considerable.

7.1.6 Greenhouse Gas Emissions

Climate change is inherently a discussion of cumulative impacts due to its global impacts. Development that occurs as a result of implementation of the proposed General Plan Update would include activities that emit greenhouse gases over the short- and long-term. While one project could not be said to cause global climate change, individual projects contribute cumulatively to greenhouse gas emissions that result in climate change. Pursuant to proposed General Plan policies, CEQA, and SCAQMD regulations, individual development projects would be required to perform project-specific air quality analyses to determine potential impacts and mitigation measures to ensure individual projects would not result in short- or long-term climate change impacts. The General Plan Update will not conflict with the implementation of regional transportation-related GHG targets outlined in SCAG's RTP/SCS because the land use modifications and predicted 9% reduction in vehicle miles traveled will result in lower emissions than those forecasted in the RTP/SCS, nor would it conflict with any of the other provisions of the

Scoping Plan or applicable regulation related to GHG reductions. Potential impacts would therefore be less than significant.

7.1.7 Hazards and Hazardous Materials

Hazardous Materials

The context for assessing cumulative hazardous materials impacts involves existing and potential development within the City and those surrounding areas that could result in the transport, use, or disposal of hazardous materials or wastes. Typical uses would include industrial activities, utility providers, and waste management services. As development occurs within the City and surrounding jurisdictions, particularly in industrial land use designations, the use, transport, and disposal of hazardous materials and wastes would increase. Concurrently, as the population and employment base increase in the area, the potential for exposure of people to hazardous materials and wastes becomes greater.

Regulation of hazardous substances and wastes, including manufacturing, storage, processing, transportation, and disposal activities, would continue to be governed mainly by federal and State agencies. The Fontana Fire Department would continue to conduct inspections and review hazardous materials storage and containment provisions at local businesses. The proposed General Plan Update would not conflict with any such authorities or standard practices involving responses to hazardous materials releases. Proposed General Plan Update land use and circulation policies would not provide for any new or more dangerous types of hazardous materials or wastes to be generated, stored, or transported within the planning area or outside of the City. The General Plan Update contains policies regarding hazardous materials treatment, transport, handling, and disposal. Therefore, the proposed General Plan Update would not result in a cumulatively considerable contribution to the regional increase in the use, transport, disposal, or exposure to hazardous materials or wastes.

Wildfires

Most of the City is developed, and areas that are not developed do not contain highly flammable vegetation. The context for assessing wildfire hazards exists wherever the urban environment interfaces with wildlands. Cumulative wildfire impacts can occur as development in fire hazard areas increase, not only because the number of people and structures exposed to wildfires is increasing but also because increased density supports the spreading of wildfires. With implementation of required fire codes, the General Plan Update would not contribute to cumulatively considerable impacts related to wildfires.

7.1.8 Hydrology and Water Quality

Groundwater Levels

Future growth throughout the City and the region would increase the need for local and imported water supplies, contributing to cumulative strains on groundwater resources and the potential to substantially lower the water table. Expanding development typically hinders groundwater recharge as well because paving and other impervious surfaces prevent or redirect water from the soil, thereby reducing or eliminating percolation in areas. The proposed General Plan Update's development capacity is anticipated to be within the anticipated water supply production pursuant to the County of San Bernardino's Urban Water Management Plan (UWMP) in accordance with the safe yield amounts. The proposed General Plan Update include policies and programs designed to enhance groundwater recharge in the City, primarily through conservation and modified drainage practices. In addition, the General Plan Update includes policies to promote water conservation and water recycling. Therefore, the proposed General Plan Update would not have a cumulatively considerable impact on groundwater resources.

Drainage and Water Quality

Future growth in the City and the region would include a variety of land use forms, street improvements, and impervious surfaces that could increase the volume of urban runoff that would need to be captured and discharged into the City's municipal storm drain system, the County's regional flood control facilities, and ultimately into the Pacific Ocean. The proposed General Plan Update supports low-impact development and appropriate drainage practices to prevent erosion, sedimentation, and flooding. This, coupled with existing regulations such as the National Discharge Elimination System (NPDES), would ensure that long-term changes to the drainage pattern do not substantially impact downstream water bodies or surrounding properties. Therefore, the General Plan Update's contribution to regional drainage and water quality impacts would not be cumulatively considerable.

Flooding

The proposed General Plan Update and the Municipal Code do not allow the placement of homes within flood zones. All significant structures built within the City would be subject to the Floodplain Management Regulations that require hydrological evaluation to ensure that minimal diversion of floodwaters occurs, and development standards are implemented to prevent flooding of on- and off-site uses. These regulations specifically prohibit construction of structures that could cause or divert floodwaters without appropriate site planning and structural design. Future development, as guided by the policies of the General Plan Update and the Municipal Code, would ensure that cumulatively considerable flooding impacts to future homes or other structures would not occur.

7.1.9 Land Use

The proposed General Plan Update would not physically divide any established community within the City. The General Plan Update introduces two new walkable mixed-use land use designations that would not contribute to cumulatively considerable impacts involving physical division of established communities.

7.1.10 Noise

Implementation of the proposed General Plan Update would not generate new stationary noise sources outside of the City and would not, therefore, result in cumulatively considerable noise impacts involving stationary sources. Additional traffic volumes associated with future growth in the City would combine with regional traffic on major, inter-jurisdictional roads and highways leading to Fontana that would contribute to cumulative effects involving roadway noise. However, as discussed in the EIR, the level of traffic noise attributable to Fontana-based trips would not result in cumulatively considerable changes in roadway noise levels in the context of regional traffic growth.

7.1.11 Population and Housing

Under the General Plan Update, no permanent or temporary housing units would need to be or are proposed to be removed, relocated, or otherwise displaced to implement the proposed plan. This Project would not contribute to cumulative impacts involving displacement of housing or persons since proposed General Plan Update policies allow for an increase in new housing construction relative to current conditions. Based on the proposed General Plan Update land use plan and the intensity levels specified therein, the ultimate population, employment capacity, and number of dwelling units would increase when compared to existing conditions; however, these increases are not considered cumulatively considerable.

7.1.12 Public Services, Utilities, and Recreation

The context for analyzing impacts related to public services is the relationship between local and regional population and urban growth and the concurrent need of individual service providers to expand facilities to meet the increasing demand. The General Plan Update includes policies designed to ensure that appropriate levels of service are provided by requiring funding, facilities expansion, and service enhancements commensurate with long-term development in the City. The General Plan Update would not result in a considerable contribution to cumulative impacts associated with the expansion of and need for public services.

Utilities and Service Systems

The context for assessing cumulative impacts to utilities and service systems varies depending on the service area and capacity of the utility which may vary from the City, San Bernardino County, or (in terms of water) even statewide. Long-term maintenance and potential expansion of water, wastewater, flood control, and solid waste disposal facilities will be required as the region continues to grow and existing infrastructure ages. Utility providers currently impose development impact fees, connection fees, and service fees designed to maintain and incrementally expand infrastructure to meet existing and growing demand. Future development in the Project vicinity and throughout the region would be subject to such fees in accordance with applicable ordinances and service master plans. The proposed General Plan Update would not have a cumulatively considerable impact on these facilities because the General Plan Update includes policies that support water conservation, wastewater reuse, and recycling that would reduce impacts on regional utilities. These policies, coupled with existing regulations, would provide for cumulatively considerable impacts to utilities and service systems to be less than significant.

Recreation

Local and community recreation resources are provided for the benefit of the immediate vicinity and generally are not subject to cumulative impacts. The context for assessing cumulative impacts to parks and recreation resources are at the regional level, where multi-jurisdictional growth would put pressure on the availability and condition of parks and recreation facilities. Incremental residential growth in the City and in its surroundings would increase the demand for local, community, and regional recreation resources. The proposed General Plan Update land use plan does not allocate specific land for parks and recreation uses but includes policies for collecting fees from new development to develop and maintain community park facilities. Given the City's record of commitment to park facilities maintenance and the considerable acreage of regional and institutional parkland nearby that supplement City-owned parks, the potential impact of the General Plan Update on recreation is not considered cumulatively considerable.

7.1.13 Transportation

General Plan Update predicted future traffic volumes utilized in the EIR traffic analysis were determined using the San Bernardino Transportation Analysis Model (SBTAM). Based on data from the SBTAM and the General Plan Update, implementation of the General Plan Update could result in an additional 23,492 households and an additional 40,599 employees within the Planning Area in comparison to SBTAM estimates for 2012. However, the SBTAM data indicates that the General Plan Update would result in fewer trips and less total vehicle miles traveled (VMT) in comparison to the current General Plan. The General Plan Update would result in approximately 19 percent lower VMT per capita in comparison to the current General Plan based on the SBTAM data. Based on the traffic analysis, the General Plan Update would result in potentially significant impacts to the traffic and transportation network as average daily traffic

(ADT) would exceed an established level of service (LOS) threshold. However, with implementation of proposed improvements in Section 5.13 Transportation of the EIR (Mitigation Measure 5.14-1), growth allowed under the General Plan Update would result in a less than significant impact regarding conflict with an applicable plan and therefore would not contribute to cumulatively considerable traffic impacts.

7.2 GROWTH-INDUCING IMPACTS

Growth inducement has the potential to result in an adverse impact if the growth is not consistent with or accommodated by the land use plans and growth management plans and policies for the area affected. As discussed in Chapter 5.11, Population and Housing, the General Plan Update does not in itself induce population growth; rather, it provides a plan for the anticipated future growth of the City. The focus of the City's General Plan Update is to provide a framework in which the growth can be managed and to tailor it to suit the needs of the community and surrounding area.

The opportunities for housing development provided in the General Plan Update are consistent with SCAG growth projections for 2036; the General Plan Update would accommodate 70,560 households through the planning horizon (see Appendix G). In addition to population growth, General Plan Update implementation could result in greater employment opportunities within the Project area through the incorporation of the new "WMXU" designation (discussed below)..

Implementation of the General Plan Update would be in accordance with local and regional planning efforts to accommodate population and employment growth in proximity to transit and services, and where public services, utilities, and other municipal infrastructure have sufficient capacity and/or existing connections. As described in Chapter 14, Downtown Area Plan, of the General Plan Update, the focus for growth in Fontana is in the central part of the City, or what are envisioned as "Livable Corridors." These Livable Corridors are imagined for Sierra Avenue from Baseline to I-10, Foothill Boulevard through the entire City, and Valley Boulevard for several blocks east and west of Sierra Boulevard. The two corresponding zoning categories for these corridors are Walkable-Mixed Use, or WMXU. WMXU-1 allows residential densities ranging from 24 to 39 du per acre and non-residential uses have a maximum Floor Area Ratio of 2.0. WMXU-2 allows residential densities ranging from 12 to 24 du per acre and allows non-residential uses up to an FAR of 1.0.

Given the above, implementation of the General Plan Update would not result in substantial population and employment growth in the City that has not already been accounted for in the General Plan Update and in regional planning efforts (i.e., SCAG projections).

Additionally, the General Plan Update would trigger growth if it would result in infrastructure with excess capacity, or, if it would remove an obstacle to growth in an area, such as providing infrastructure that was previously not available. New infrastructure (including the addition of new roadways) are not directly proposed under the General Plan Update. Therefore, there would be no impact relative to growth inducement resulting from infrastructure with excess capacity.

7.3 SIGNIFICANT IRREVERSIBLE CHANGES

An irreversible commitment of non-renewable natural resources is inherent in any development project(s), or in the case of the General Plan Update, several development projects over a long period of time. The potential future development associated with implementation of the General Plan Update would consume limited, slowly renewable and non-renewable resources. Such resources used for future construction projects would include, but are not limited to, lumber and other related forest products; sand and gravel; native topsoil; a variety of metals used in the manufacture of building materials such as steel, copper piping and wiring; and hydrocarbon-based fuel sources that require extraction and chemical alteration and/or combustion of natural resources such as oil, natural gas, coal, and shale. As such, future construction activities related to implementation of the General Plan Update would result in the short-term, yet irretrievable, commitment of nonrenewable energy resources.

Resources that would be continually consumed with implementation of the General Plan Update include water, electricity, natural gas, and fossil fuels. However, the amount and rate of consumption of these resources would not result in the inefficient or wasteful use of such resources. With respect to operational activities, compliance with all applicable building codes, as well as the city's General Plan policies and standard conservation features, would ensure that natural resources are conserved to the maximum extent possible. Although nominal, the energy requirements associated with implementation of the General Plan Update would, nonetheless, represent a long-term commitment of non-renewable resources.

Given the above, potential future development associated with the General Plan Update would result in the short- and long-term commitment of limited, slowly renewable, and nonrenewable resources, which would limit the availability of these particular resource quantities for future generations or for other uses through and potentially after the planning horizon. However, continued use of such resources would be nominal and would not conflict with the City's growth forecasts. Therefore, although irreversible changes would result from implementation of the General Plan Update, such changes would not be considered significant.

7.4 SIGNIFICANT UNAVOIDABLE IMPACTS

The analyses of the various environmental issues presented in this EIR conclude that the proposed General Plan Update would not result in any significant environmental impacts that cannot be avoided or reduced to less than significant levels through mitigation measures, and/or compliance with existing or proposed local and regional plans, regulatory measures, and General Plan Update policies and actions.

7.5 EFFECTS NOT FOUND TO BE SIGNIFICANT

Impacts related to Agriculture and Forestry Resources and Mineral Resources were found not to be potentially significant and were therefore not further analyzed in this EIR. However, a brief discussion of this issue area is provided below.

7.5.1 Agricultural and Forestry Resources

The General Plan Update would have a significant impact on agricultural resources if it would convert prime, unique, or statewide important farmland to nonagricultural use, conflict with zoning for agricultural use or with a Williamson Act contract or result in a change to the existing environment which would result in the conversion of farmland to nonagricultural use. A significant impact also would occur if the General Plan Update results in a loss or conversion of forest land to non-forest use. The City's Resource Area (OS-R) zoning district includes agricultural land, which accounts for approximately 332 acres (less than 2%) of the Project area. The General Plan Update does not propose any changes to this land use or the associated zoning code. Additionally, no portion of the City is designated or zoned (or proposed to be designated or zoned) as forest land or timberland. Given the above, no impact would result from implementation of the General Plan Update and, as such, further analysis of this issue area is not warranted.

7.5.2 Mineral Resources

The proposed General Plan Update does not contain policies that conflict with the recovery of future mineral resources. Therefore, significant mineral resource deposits, should they be unearthed in the future, would continue to be protected over the long term. Overall, the General Plan Update would not contribute to a loss of mineral resources.

7.6 ENERGY CONSERVATION

The environmental effects of the General Plan Update are discussed in Section 5 of this EIR and summarized in Section 2, Summary. Implementation of the General Plan Update would require the long-term commitment of natural resources and land. Approval and implementation of actions related to the General Plan Update would result in an irretrievable commitment of non-renewable resources, such as energy supplies and other construction-related resources. The energy resource demands would be used for construction, heating and cooling of buildings, transportation of people and goods from the City, heating and refrigeration for food preparation and water, as well as lighting and other associated energy needs.

Nonrenewable resources would be committed primarily in the form of fossil fuels and would include fuel, oil, natural gas, and gasoline used by vehicles and equipment associated with implementation of the General Plan Update. The consumption of other non-renewable or slowly renewable resources would result from development associated with the General Plan Update. These resources would include, but would not be limited to, lumber and other forest products,

sand and gravel, asphalt, photochemical construction materials, steel, copper, lead, and water. Since alternative energy sources such as solar or wind energy are not currently in widespread local use, it is unlikely that real savings in non-renewable energy supplies (i.e. oil and gas) could be realized in the immediate future.

7.6.1 Gridscape Solutions Grants

An example of the City's commitments to energy conservation the City is one of the participating cities selected for a Gridscape Solutions grant from the California Energy Commission to "Demonstrate the business case for advanced micro-grids in support of California's energy and GHG policies".

The City is located in the Inland Empire, which has historically had some of the worst air quality in the state and will implement grant opportunities that allow the development of projects and programs to reduce energy use and GHG's.

In addition to the positive environmental effect this grant will have, the solar emergency micro-grids will also provide the City additional redundancy at the most critical essential services buildings, including the police department and City Hall. These buildings house the City's dispatch center, emergency operations center, and traffic control center.

With the infrastructure that this micro-grid will provide, the City will have the ability to utilize additional solar and battery capacity in the future to help reduce the City's carbon footprint further and offset peak demand charges. For every dollar that is saved on energy costs, is a dollar that can be reallocated back to the City for services, programs, and projects.

The project has been preliminarily designed to consist of 50 kW solar PV rooftop, 50 kW solar PV carport, and 120 kWh of battery storage at City Hall. The Police Department will consist of 50 kW of solar PV rooftop, 100 kW solar PV carport, and 450 kWh of battery storage. EV charging stations have also been included in the preliminary design, but the exact number or locations have not yet been determined.

8.0 PREPARERS

This environmental impact report (EIR) was prepared by Stantec Consulting Inc. (Stantec), under contract to the City of Fontana to provide technical support for the preparation of the EIR, General Plan Update, Zoning Code update, and associated/supporting analyses and documentation. It is recognized that no one individual can be an expert in all of the environmental disciplines required to prepare this EIR. Consequently, an interdisciplinary team, consisting of subject matter experts in various disciplines, was required to prepare and complete this EIR. Table 8.0-1 provides a list of the team that contributed to preparation of the EIR.

Table 8.0-1 List of Preparers

Name	Issue Area/Role
Lead Agency: City of Fontana	
Debbie Brazill	Deputy City Manager
Zai AbuBakar	Director of Community Development
Kevin Ryan	Strategic Transportation Engineering Manager
Shannon Casey	Senior Engineer
Dawn Rowe	Senior Planner
Maria Torres	Administrative Secretary
Jenny Espinoza	Secretary
Stantec EIR Preparation Team:	
Robert Prohaska	Principal Environmental Planner
Kevin Kohan	Senior Environmental Planner
Lauren Eber	Environmental Scientist
Michael Weber	Principal Scientist
Lindsay McDonough	Environmental Planner
Ginger Andersen	Senior Planner
Daryl Zerfass	Principal Transportation Planner
Rocky Brown	Associate Biologist
Jared Varonin	Principal Biologist
Victoria Harvey	Senior Archaeologist
Hubert Switalski	Senior Archaeologist
John Moynier	Principal Water Resource Management

APPENDIX A
NOTICE OF PREPARATION

Notice of Preparation and Public Scoping Meeting Notice

City of Fontana General Plan Update Draft Program Environmental Impact Report

Date: **February 29, 2016**

To:
State Clearinghouse
State Responsible Agencies
State Trustee Agencies
Other Public Agencies
Organizations and Interested Persons

Lead Agency:
City of Fontana Community Development Department
James R. Troyer, AICP
Director of Community Development
8353 Sierra Avenue
Fontana, CA 92335
Phone: (909) 350-7640
Email: jtroyer@fontana.org
Website: fontanaforward.com

Summary

The City of Fontana (City) will serve as Lead Agency in the preparation of a programmatic Environmental Impact Report (Program EIR) addressing the comprehensive update to the City's General Plan as defined by the California Environmental Quality Act (CEQA) as set forth in Public Resource Code 21065. This programmatic EIR will address the environmental impacts associated with the adoption and implementation of the Fontana General Plan. Information regarding the project description, project location, public outreach process, and topics to be addressed in the Draft EIR is provided below. A copy of this NOP describing the proposed project and the potential environmental effects is available online at the website: **fontanaforward.com**. It is also available in hard copy at the City of Fontana Community Development Department at the address shown above. Additional Project information is available at the City hall address above and also at **fontanaforward.com.**

Submitting Comments

Public agencies and interested parties are invited to submit comments in writing as to the scope and content of the EIR. Public agencies submitting comments are encouraged to identify a contact person and any key agency concerns regarding the proposed project. The City needs to know the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection to the proposed project. Public and agency comments will be received over a 30-day period starting on **February 29, 2016, ending on March 30th 2016. All comments must be received prior to 5:00 p.m. on March 30th 2016.** In the event that no response or request for additional time is received by any Responsible or Trustee Agency by the end of the review period, the Lead Agency may presume that the Responsible Agency has no response to make [CEQA Guidelines Section 15082(b)(2)].

Please send your responses to James Troyer, Director of Community Development, at the address shown above. All parties that have submitted their names and mailing addresses will be notified as part of the projects CEQA process.

Scoping Meeting

The City will conduct a scoping meeting to receive public input on the scope of the Fontana General Plan EIR. At this meeting, individuals, agencies, and organizations are encouraged to provide the City with their input on the topics and analysis for the EIR.

The scoping meeting will be held on March 10, 2016th at 7:00 PM at the Senior Center, located at 16710 Ceres Avenue, Fontana CA 92335.

Project Characteristics and Background

Project Location and Setting

The City of Fontana is a highly urbanized area comprised of residential, commercial, agricultural and industrial uses, as well as supporting public uses. To the north of the City limits is the City's Sphere of influence and the San Bernardino National Forest; to the west are unincorporated Sphere of Influence lands and the City of Rancho Cucamonga; to the south is unincorporated Riverside County which contains considerable residential development; and to the east are the City of Rialto and Sphere of

Influence lands. The highest concentration of development is within the central "City Core" area, which contains a large amount of single and multiple family dwelling units with numerous commercial business located along Sierra Avenue, the main north-south corridor in the City.

A significant portion of Fontana's population commutes elsewhere to work. 60,743 residents of Fontana are employed outside of the City. Only 5,885 employees, or 13.7% of the total number of people employed in Fontana live there as well; approximately 42% of workers who live in Fontana travel 25 miles or more to work. Approximately 14% of the working population in Fontana travel more than 50 miles to work.

Regulatory Setting

Each city in California must prepare a comprehensive, long term general plan to guide its future (Government Code §65040.2). The General Plan provides guidance to decision makers on the physical development of the city. It expresses the city's development goals and embodies public policy for the distribution of future land uses, both public and private. Seven elements are required by the state: land use, circulation, housing, conservation, open space, noise, and safety. Additional elements are permitted and elements can be combined or consolidated, as long as the mandated elements contain required content.

The goal of the state's planning framework is to reduce greenhouse gas emissions. The framework (SB 375 and SB 226) calls for integrating land use, housing, and transportation to reduce greenhouse gases through diversifying land uses, developing multimodal transportation networks, and creating regional Sustainable Communities Strategies (SCS). Fontana is covered by the regional SCS prepared by the Southern California Association of Government's (SCAG). Streamlined CEQA approvals or exemptions are available for development projects consistent with the state planning framework.

General Plan Update Study Area

In addition to the City proper, state law requires that a municipality adopt a General Plan that addresses "any land outside its boundaries which in the planning agency's judgment bears relation to its planning (California Government Code §65300)." This includes the City's Sphere of Influence (SOI), which encompasses unincorporated areas that are related to the City's current and desired land use planning and growth.

The City of Fontana is generally located north of State Route 60, east and south of Interstate 15 (I-15), and west of I-215 in southwestern San Bernardino County, California (Exhibit 1, Regional Vicinity). A small portion of the City extends north of I-15. The City is depicted on the Cucamonga Peak, Devore, Fontana, and Guasti quadrangles of the United States Geological Survey's (USGS) 7.5-minute topographic map series in Sections 17, 18, 19, 20, 29, 30, 31, and 32 of Township 1 north, Range 5 west; Sections 13, 14, 23, 24, 25, 26, 33, 34, 35, 36 of Township 1 north, Range 6 west; Sections 4, 5, 6, 7, 8, 9, 16, 17, 18, 19, 20, 29, 30, 31, and 32 of Township 1 south, Range 5 west; and Sections 1, 2, 3, 12, 13, 21, 25, 26, 27, 28, 33, 34, 35, and 36 of Township 1 south, Range 6 west (Exhibit 2, Site Vicinity). In addition, there is an area abutting southwest Fontana that is considered part of the City's sphere of influence that was also included in this analysis. This area is depicted on the Fontana and Guasti USGS quadrangles in Sections 9, 10, 11, 12, 13, 14, 15, 16, 21, 22, 23, 24, and 27 of Township 1 south, Range 6 west. Specifically, the City is located north of Jurupa Valley and the Jurupa Hills; west of Bloomington, Rialto, Lytle Creek and the Cajon Wash; south of the San Bernardino National Forest and the San Gabriel Mountains; and east of Etiwanda, Rancho Cucamonga, and Ontario (Exhibit 3, Fontana City Limits). (Baker International 2015)

Project Description

The proposed project is the General Plan Update. The General Plan Update will include the new development and/or update of all elements in the General Plan. The General Plan Update includes changes in land use designations as well as updates to policies and programs within the various elements.

Each element of the General Plan focuses on a specific topic and includes a discussion, goals, and policies related to that topic. The following elements will be developed or updated as part of the General Plan Update process with the exception of the Housing Element that was recently updated in 2014. At this time we expect the elements to be organized in the following order:

Part One: Our Vision for Fontana's Future

1. Vision and Principles
2. How the Plan Was Developed [survey, community participation, etc.]
3. Understanding Fontana Today [summary version of the Background Report, with the rest of the report in the Appendix]

Part Two: Living in Fontana

4. Community and Neighborhood [including Historic Preservation]
5. Housing [2014 element]
6. Health and Wellness
7. Open Space, Conservation, Parks and Trails
8. Community Services

Part Three: Sustainable Systems

9. Community Mobility
10. Green Systems and Infrastructure
11. Noise and Safety
12. Sustainability and Resilience [including GHG reduction, air quality, adaptation to drought conditions, etc.]

Part Four: Creating a Complete Community

13. Economic, Education and Workforce Development
14. Community Planning and Design [including framework for Downtown, Foothill Blvd, Valley Blvd, Sierra Avenue, Ventana; retiring some specific plans]

Part Five: Fontana Forward: A Call to Action

15. Land Use [including discussion of alternatives, Future Land Use Plan, recommendations for development regulations]
16. Governance and Implementation [including fiscal analysis, governmental organization, relationship to CIP, regional relationships, etc.; plus implementation matrix]

Program EIR Analysis

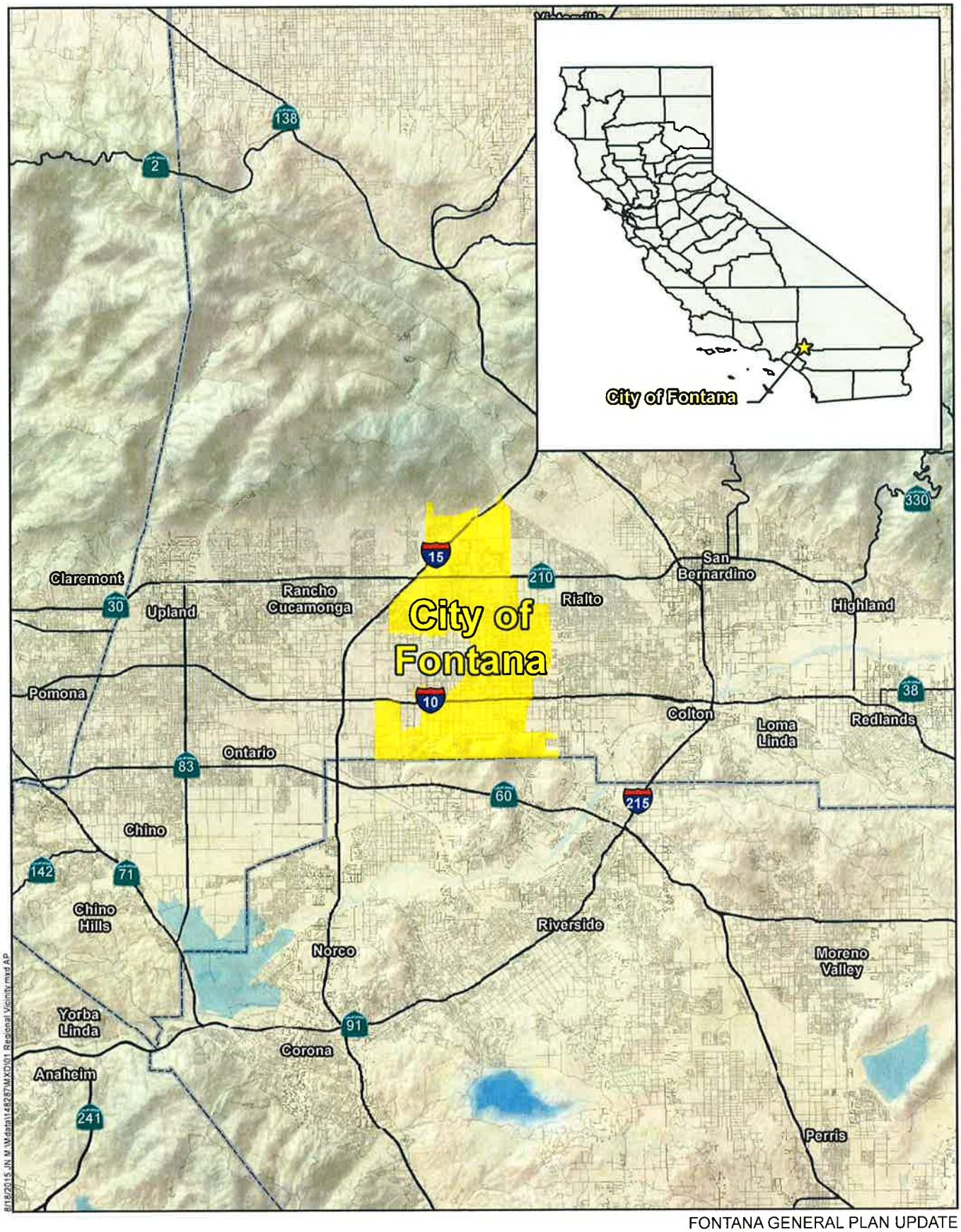
The City, as the Lead Agency under the California Environmental Quality Act (CEQA), will prepare a Program Environmental Impact Report for the Fontana General Plan Update. The City's General Plan will be comprehensive in scope. The EIR will be prepared in accordance with CEQA, implementing the CEQA Guidelines (Guidelines), relevant case law, and City procedures. The

General Plan Update is considered a "project" under CEQA, and is therefore subject to CEQA review. As a policy document, the General Plan provides guidance and sets standards for several areas of mandatory environmental review for later "projects" that would be undertaken by local government and the private sector.

The EIR will analyze potentially significant impacts associated with adoption and implementation of the General Plan Update. In particular, the EIR will focus on areas of planned land use changes in the City.

Pursuant to Section 15063(a) of the CEQA Guidelines, no Initial Study will be prepared for the proposed project. The EIR will evaluate the full range of environmental issues contemplated under CEQA and the CEQA Guidelines. At this time, the City anticipates that EIR sections will be organized in the following manner:

- Aesthetics and Visual Resources
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology, Soils, and Mineral Resources
- Greenhouse Gases and Climate Change
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Population
- Noise
- Public Services and Recreation
- Transportation and Circulation
- Utilities
- Mandatory Findings of Significance/Cumulative Impacts



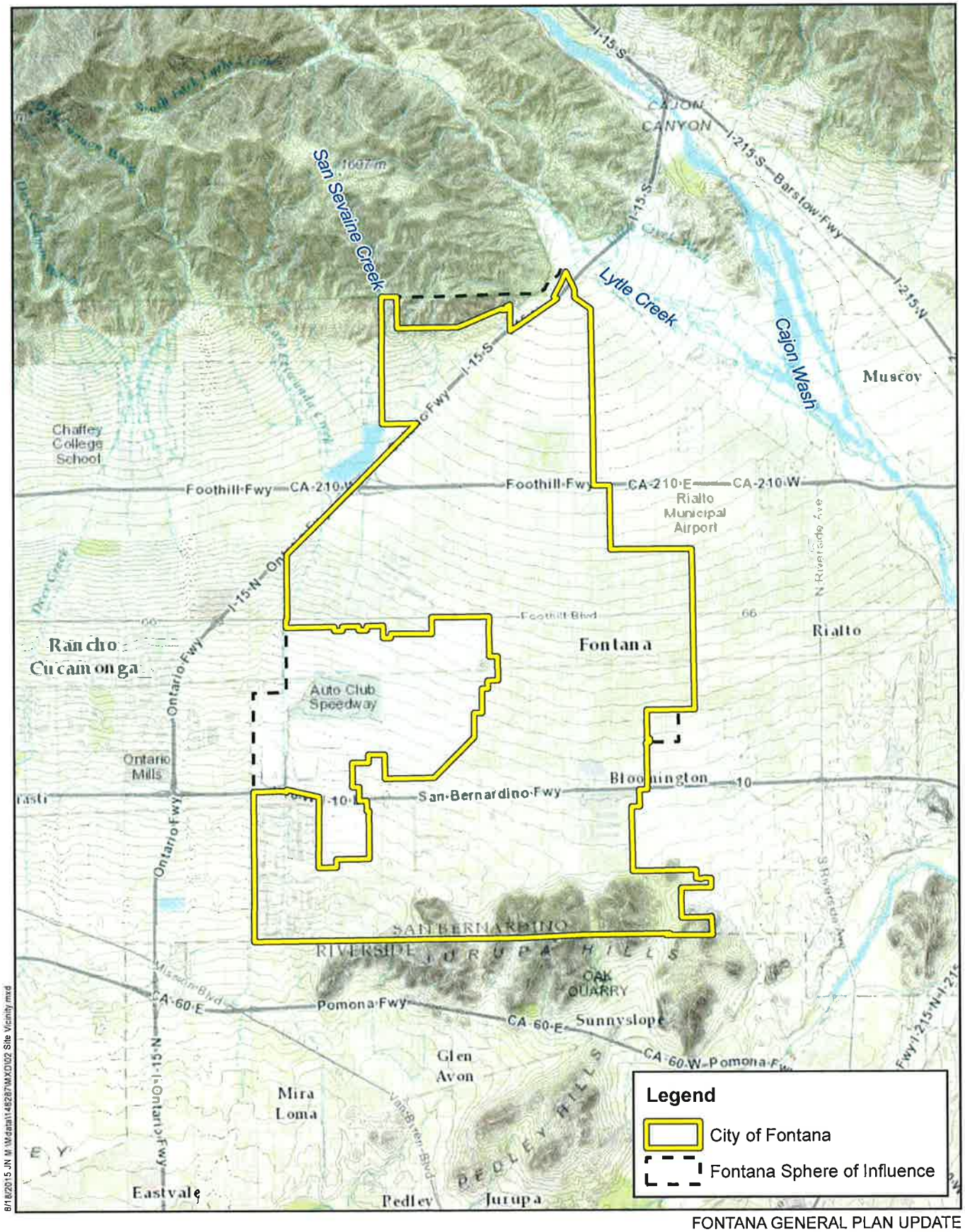
8/18/2015 JN: M:\Wdata\148287\MXD\01 Regional Vicinity.mxd AP

Source: ESRI Relief Map, National Highway Planning Network

FONTANA GENERAL PLAN UPDATE
HABITAT ASSESSMENT

Regional Vicinity

Exhibit 1



8/18/2015 JN M:\Wdata\14828\MXD\02 Site Vicinity.mxd

FONTANA GENERAL PLAN UPDATE
HABITAT ASSESSMENT

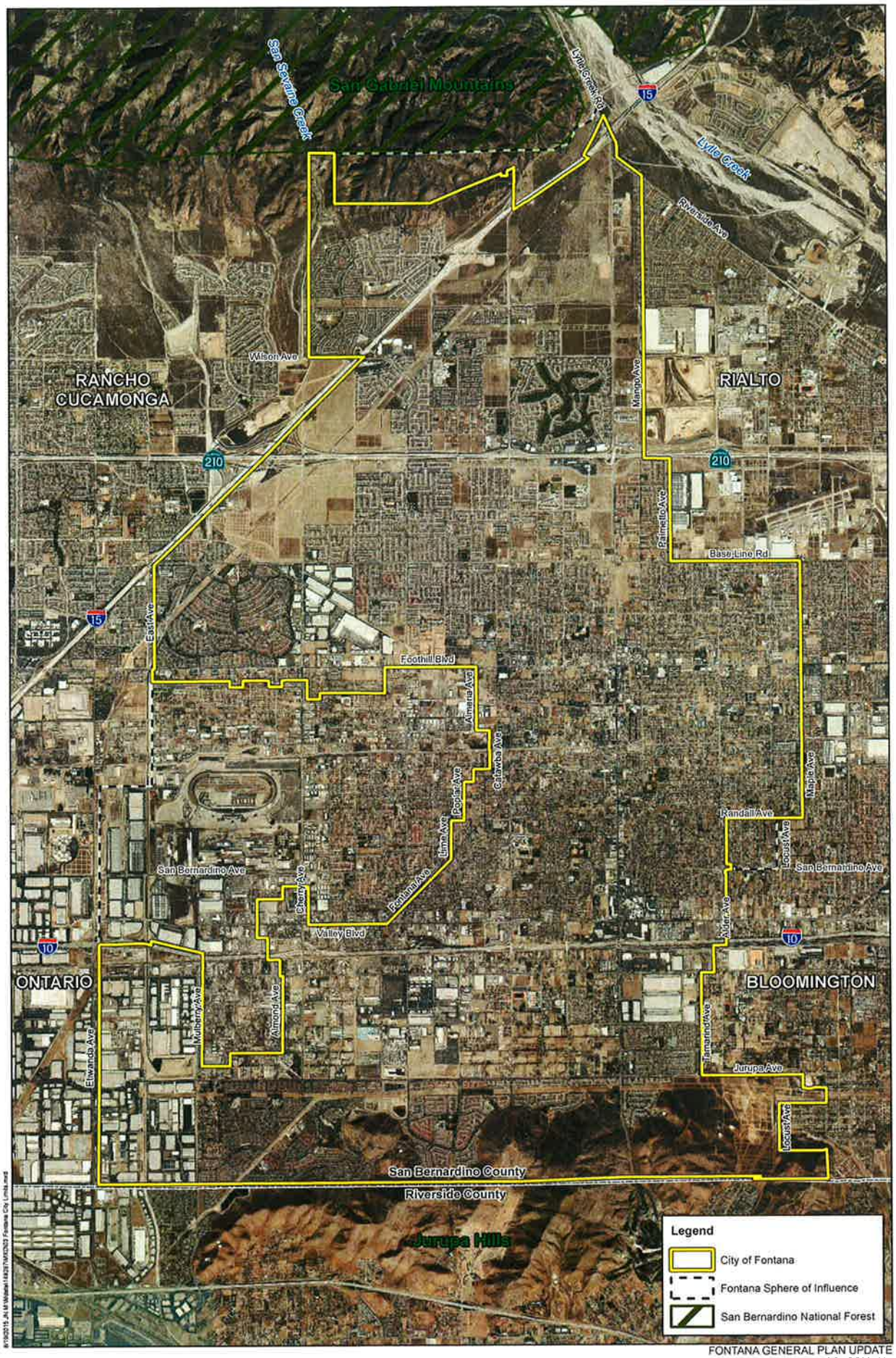
Site Vicinity

Michael Baker INTERNATIONAL

0 1 2 4 Miles

Source: San Bernardino County, ESRI World Topographic Map

Exhibit 2



FONTANA GENERAL PLAN UPDATE
HABITAT ASSESSMENT

Michael Baker INTERNATIONAL

0 2,250 4,500 9,000 Feet

Source: San Bernardino County, Eagle Aerial 2014

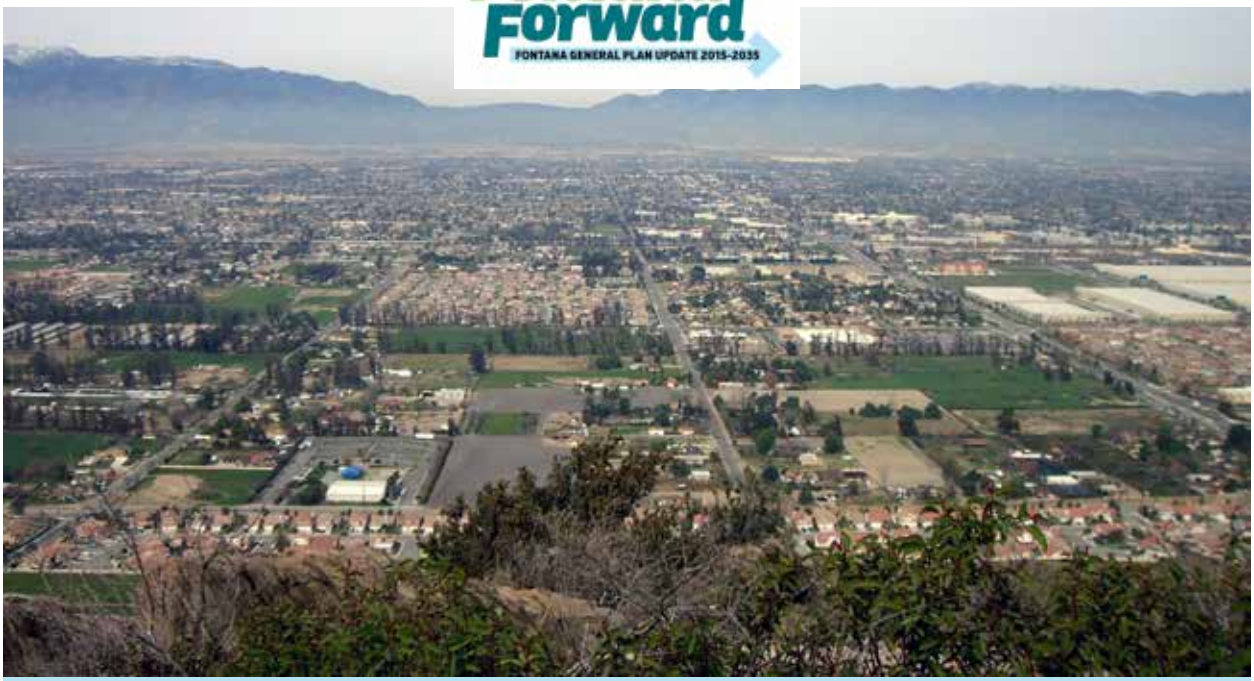
Fontana City Limits

Exhibit 3

APPENDIX B
BACKGROUND REPORT

Fontana Forward

FONTANA GENERAL PLAN UPDATE 2015-2035



FONTANA GENERAL PLAN UPDATE

Background Report

FONTANA
CALIFORNIA

APRIL 2016
PREPARED FOR THE CITY OF FONTANA, CALIFORNIA

Stantec

CONTENTS

Fontana At A Glance 1

1. *The Big Picture: Fontana in Transition* 5

2. *The General Plan Update* 12

3. *Who We Are: Population Trends* 17

4. *Living in Fontana* 24

5. *Prosperity and Opportunity* 69

6. *Community Systems* 76

7. *Community Design and Land Use Regulation* 98

MAPS

PAGE	TITLE
31	Historic Places
43	Publicly Owned Land
44	Existing Land Use
45	Unbuilt Land
47	Specific Plans
49	Development Typologies
50	Community Policing Districts [Planning Districts]
59	Parks and Open Spaces
61	Neighborhood and Community Parks [from *Fontana Parks, Recreation and Trails Master Plan,* 2008]
62	Under-served Areas [from *Fontana Parks, Recreationand Trails Master Plan,* 2008]
73	Median Income
74	Poverty
80	Roadway Functional Classifications
81	Truck Network
82	Mobility
84	Sidewalk Connectivity
85	Average Daily Trips
87	Volume/Capacity Ratios
88	Bus Network
91	Freight Rail Network
96	Water and Sewer Infrastructure
103	Existing Zoning

Fontana Forward
FONTANA GENERAL PLAN UPDATE 2015–2035



Fontana at a Glance

Who we are

- Fontana is a growing community of 204,931 people, and one of the 20 safest communities in the country.
- We're the 20th-largest city in California, 3rd largest in the Inland Empire, and 2nd-largest in the county.
- We are a young population, with a median age of 29, compared to the state median age of 36.
- Most of us came here recently; 7% of residents moved here in 2010 or later, and 90% moved in 1990 or later.
- We have more children and fewer seniors by percentage than the county or the state.

Our households Census Bureau (2010)



87% of all households are related families



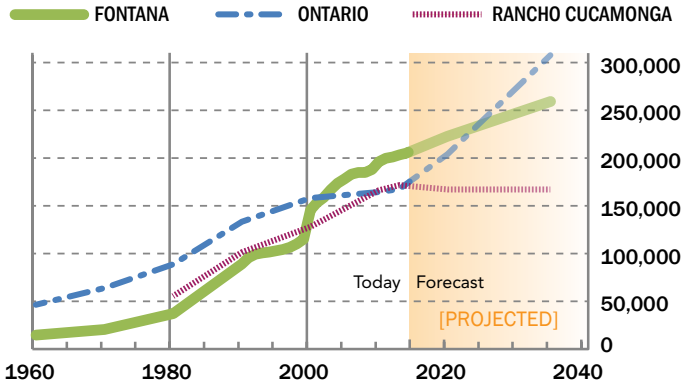
60% of households have children



The average household size is 4 people

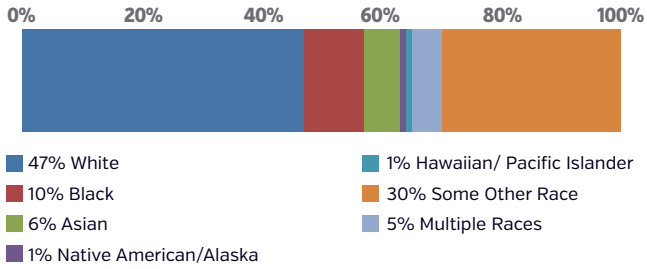
We've been growing faster than nearby cities

Census Bureau and Southern California Association of Governments (2008)



We're diverse, 67% Latino, and 30% foreign-born

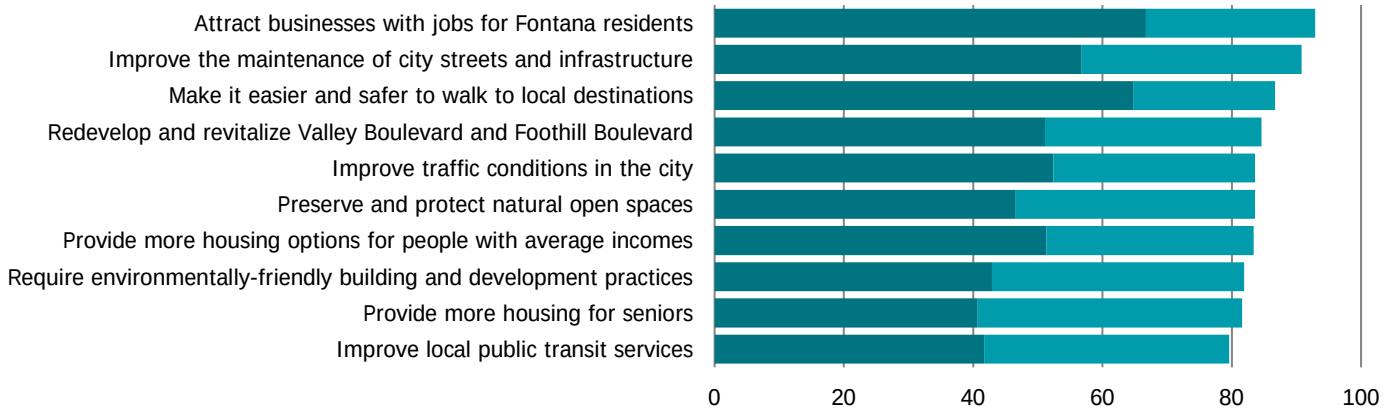
Census Bureau (2010) and ACS Estimates (2009-2013)



What we think about our future

800 adult residents in Fontana were surveyed in September 2015, in English and Spanish, about the future of our city.

Our top ten future priorities True North Research, Inc. (2015), % resident respondents answering "high priority" or "medium priority"



How we live

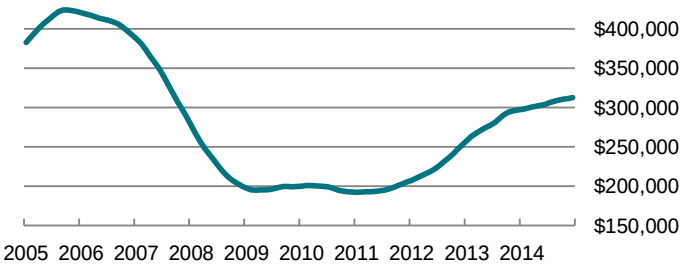
Housing

Zillow.com, 2015

- The median home value in Fontana is $312,500.
- Fontana home values" have gone up 5.3% over the past year, and are predicted to rise 4.7% within the next year.
- The median rent for a two-bedroom housing unit in late 2015 was approximately $1,300.

Fontana's home prices are rebounding

Zillow.com home prices index (through Aug 31, 2015)



Most housing is owner-occupied & single-family

ACS Estimates (2009-2013)



68% owner-occupied 32% rental



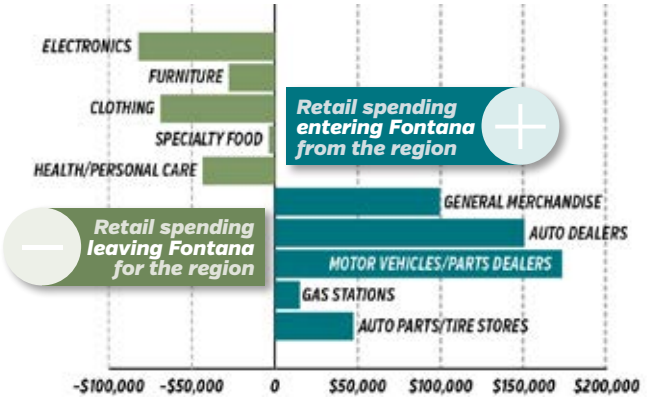
78% single-family 22% multifamily

Dining and shopping

Commercial corridors are on Foothill, Sierra, and Valley and commercial centers are located on major roads.

Retail expenditure is balanced in Fontana, but it's weighted toward some sectors

Source: Census Bureau, Center for Economic Studies (2013), retail surplus/leakage. Note that the chart contains major categories but does not show all spending.



Institutions

- Public and non-profit institutions are distributed throughout Fontana, with schools, police and fire stations, and community centers in neighborhoods.
- Fontana has one major hospital, Kaiser Permanente, and several smaller health centers.
- Post-secondary educational institutions in Fontana are Chaffey College and Westech College.
- The Civic Center/City Hall Campus, completed since the 2003 General Plan, is a central institutional focus point for downtown, including the Lewis Library and Technology Center, which opened in 2008.



The Lewis Library and Technology Center

Downtown

Important assets in downtown include:

- Civic Center
- Metrolink station
- Restored Center Stage Theatre
- Access to the Pacific Electric Trail
- Walkability

Issues and opportunities for downtown include:

- Several blocks of vacant land are an opportunity for walkable, mixed-use developments.
- The safety, comfort, and appearance of streets and parking lots can be improved for pedestrians.



Sierra Avenue, Downtown Fontana

Healthy and green systems, sustainability, and recreation

Healthy Fontana

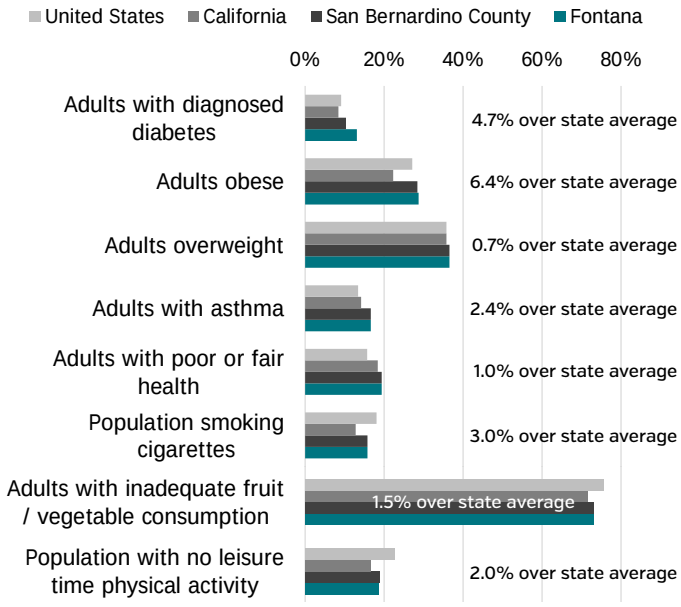
The Healthy Fontana program started in 2004, following the city's recognition of the importance of planning for community health as part of the city's overall efforts to build a safe and attractive community with a high quality of life.

Our award-winning program promotes wellness through healthy eating, active lifestyles, behavior change, sports, gardening, and farmers' markets. However, our community still faces health challenges.



We still have some health challenges

Centers for Disease Control and Prevention (2006-12), %



Open space, parks and recreation

- Our location between Jurupa Hills and Mount Baldy provides for a unique environment and city identity.
- We have 41 parks on 366 acres providing recreation opportunities.
- Mary Vagle Nature Center and Martin Tudor Jurupa Hills Regional Park and Splash Park in southern Fontana are popular attractions for the entire city.
- Four community centers serve all parts of the city.

Infrastructure and utilities

Energy: Fontana has the state's first zero-net neighborhood. Zero-net-energy homes offset all or most of their annual energy consumption with renewable energy.

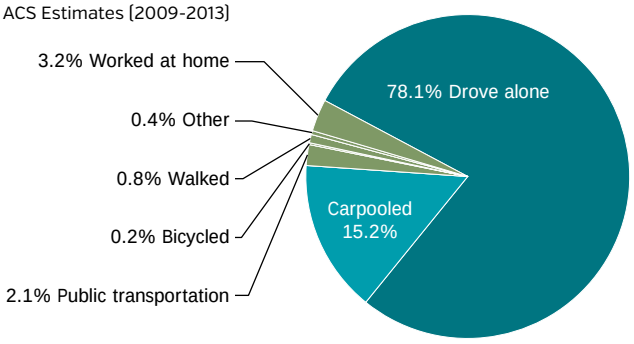
Water: Drinking water comes from five providers, and is predominantly served by the Fontana Water Company. Water's diverse sources include local basins and the State Water Project.

Mobility: Our transportation environment has continued to evolve since the 2003 General Plan.

- We are a major transportation hub with convenient access to Interstates 10, 15 and 210.
- Walkability varies throughout our city.
- Fontana's bicycle network expanded in recent years, especially with the Pacific Electric Trail linking us to other Inland Empire communities.
- Fontana is served by Omnitrans with 10 bus routes.
- Metrolink provides passenger rail service to Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura counties from downtown, with weekend service and 38 weekday trains serving an average of 372 riders per weekday (FY15 Q4).

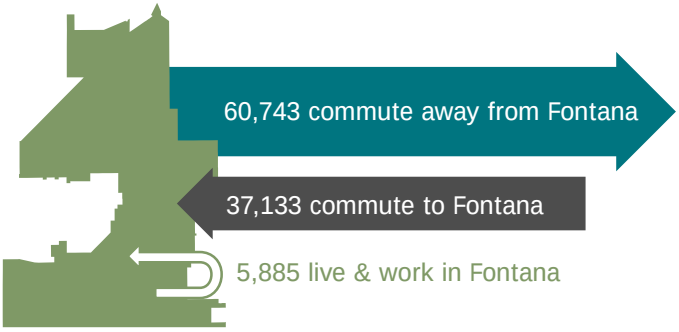
Most residents drive alone to work

ACS Estimates (2009-2013)



Most workers commute to jobs outside of Fontana

Census Bureau, Center for Economic Studies (2013), number of employees



Prosperity and opportunity

Our prosperity

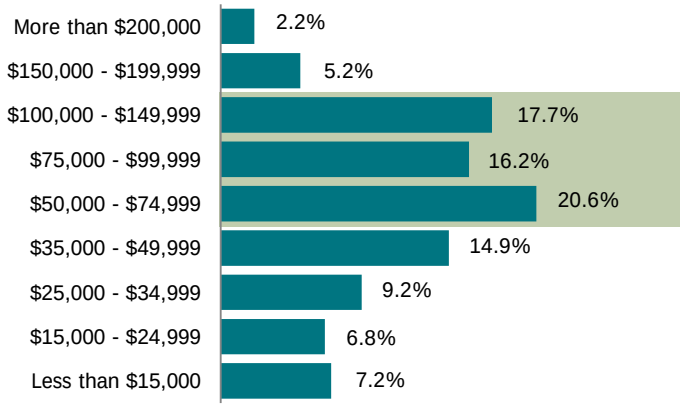
- Our city is now the westernmost city with available space to accommodate both residential and industrial development in the Inland Empire. However, much of the currently unbuilt land in Fontana has already been entitled for development.
- While the recession ended six years ago and California's economy moves forward, the Inland Empire have been the slowest to recover.
- We are a middle-income community, with a median household income of $60,869 (slightly above the state median income), and are expected to grow 2.7% annually between 2015 and 2020.
- 15% of all residents and 21% of children live in poverty.
- There are 43,018 jobs in Fontana, but only 8.8% of employed residents work in Fontana.
- Over 70% of jobs in Fontana are in services, retail or wholesale. Kaiser Medical Group, Fontana Unified School District, and the City of Fontana are the top three employers.
- The construction, warehousing and logistics industries remain important economic drivers for Fontana's economy.
- Approximately 42% of our working population travels 25 miles or more to work, and 14% travels more than 50 miles to work.

Fiscal resources

- Sources of revenue for governmental activities are general taxes, including property and sales taxes, and program revenues, such as charges for services.
- The most significant government expenditures are for public works, police and fire, general government, and engineering.

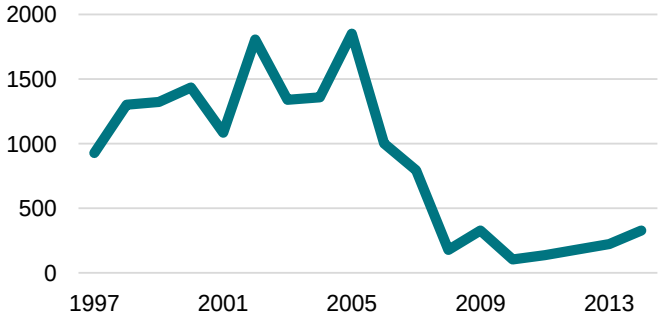
Over half of households make $50k–$150k a year

ACS 2009-2013 estimates, % of households



Single-family building permits are inching up

Construction Industry Research Board, number of permits



Industry

- Fontana has 54,250,693 square feet of industrial space.
- Fontana's market for industrial space remains strong and compares favorably to other areas of the region.
- Fontana has a lower industrial vacancy rate than other cities in the Inland Empire West.
- Fontana is experiencing high demand for logistics and warehousing space, but these industries typically produce few jobs.

Our economic strengths and issues

- Higher median household income than the county (in 2014 the median for Fontana was $64,995; for San Bernardino County it was $54,100).
- Our unemployment rate dropped to 6.5% from the peak rate of 15% in 2010.
- Large employers, such as the Kaiser Medical Group, provide a steady employment base.
- The industrial market remains strong, with low vacancy rates and high average rents.
- Our access to three major freeway corridors (I-10, I-15, and I-21) provides economic development opportunities.
- Educational attainment remains relatively low in Fontana, with only 15% of the workforce holding a bachelor's degree or higher.
- 91% of employed residents work outside the city.

1. THE BIG PICTURE: FONTANA IN TRANSITION

A. The Four Fontanas

There have been four Fontanas over the last 150 years, and Fontana today faces a new transition. First, permanent vineyard settlements encroached on the Native American societies in the San Bernardino Valley in the 1880s to early 20th century. After the arrival of A.B. Miller, the Fontana Farms' "Partnership of Hens and Oranges" spanned 1906 to 1942. Kaiser Steel remade Fontana into a steel town between 1942 and the 1983. And most recently, Fontana in the 1980s began to transition to an identity as an affordable suburb in the sprawling metropolitan world of Southern California.

Fontana's four identities emerged as the result of transformative events: the arrival of rural pioneers leaving Los Angeles; A.B. Miller's creation of the Fontana Farms agribusiness model combined with land subdivision; World War II and Henry Kaiser's construction of the first steel plant in the West; and, as the steel mill declined and then closed, Fontana's transformation into a bedroom community for families priced out of housing in the coastal counties. Most of the Kaiser Steel plant is gone and replaced by the Auto Club Speedway. Both Fontana Farms and smallholder farming of poultry and citrus disappeared as the steel mill, housing, shopping centers, and the logistics industry replaced agriculture.

Fontana became the land of housing opportunity and is now a city where most residents commute to jobs elsewhere. This most recent transformation, which first gained steam in the 1980s, reached its height just before the Great Recession—the crash of 2007-2009. After riding the real estate bubble, Fontana joined other communities in the Inland Empire as one of the most battered by the recession, with high unemployment, slashed real estate prices, high levels of foreclosure, and almost no construction activity. As this General Plan Update is being written in 2015 and 2016, Fontana has been gradually recovering from the recession. Now, as the third most populous city in the Inland Empire, Fontana is poised to build on its success as a residential city and enter a new period of positive transformation.

A note on terminology and data

- ***Terminology:*** *In this report and the General Plan Update, "City" will be capitalized when referring to the municipal government; "city" without an initial capital letter will refer to the community as a geographic and socioeconomic entity.*
- ***Data:*** *This report and General Plan Update are being prepared at the midpoint between the 2010 and 2020 censuses. In addition to the decennial population counts, the U.S. Census Bureau now produces estimated data based on three- and five-year surveys of sample populations called the American Community Survey. Sample surveys of small areas, such as census tracts and block groups, are less reliable than of larger populations, such as the entire city, because of sample sizes. Proprietary databases, such as ESRI Business Analyst, also provide estimated data based on the Census and other data sources. The State of California also provides some demographic data. These and other sources have been consulted for this report.*

B. *Fontana in The Context of The Inland Empire*

Incorporated in 1952, the City of Fontana is part of the Inland Empire, which is located approximately 50 miles east of the City of Los Angeles. The geographic boundaries of the Inland Empire are blurry, but the term is commonly used to describe western San Bernardino and Riverside counties (the Riverside-Ontario-San Bernardino Metropolitan Statistical Area) and their combined population of approximately 4 million people. Fontana is the second-most populous city in San Bernardino County and the third-most populous in the Inland Empire (after Riverside and San Bernardino). The growth of the Inland Empire after World War II reflected Southern California's expanding population drawn by an economy based on defense, manufacturing, construction, and entertainment—with the Inland Empire primarily functioning as the bedroom community for jobs in the coastal counties. By the 1990s and 2000s, some parts of the Inland Empire were attracting non-residential investment, particularly in logistics, manufacturing and services, including a growing number of professionals. However, the Inland Empire economy was still very dependent on construction and on jobs in the coastal economy in 2007, when the Great Recession began.[1]

Foreclosures, unemployment, declining incomes, and growing poverty were characteristic of the region during the recession. The region began to recover in 2012, with growing employment, new business formation, demand from the warehousing and logistics sector, and the slow return of residential construction. Although low-paying (under $30,000 a year) and temporary jobs still predominate, there are signs that the region has begun attracting economic sectors with better-paying jobs, such as health care, insurance, and professional services.

Like the rest of California, the Inland Empire's demographics have become more diverse over time, in both racial and ethnic terms. The affordability that attracts new residents is also a draw for immigrant households. This is an important demographic, because immigrants are disproportionately likely to create new businesses, particularly in technology and engineering. Parts of the region are also beginning to be more attractive to college-educated young adults between 25 and 34 years old than in the past. The number of millennials, the 20 to 29 age group, also appears to be growing, though the data may also reflect this group's difficulty in finding jobs that allow them to establish their own households.

While housing in the Inland Empire remains more affordable than in the coastal counties, housing costs are rising relative to incomes. Future success for the region requires integrated policies that keep housing affordable while diversifying the economy with higher-paying jobs. This is related to a long-standing Inland Empire challenge of relatively low educational achievement. "Overall, the future prosperity of the Inland Empire depends on mixing its traditional strengths—affordable housing and strong blue collar sectors—with the expansion of newer industries as well as its growing immigrant-based economy....To remain Southern

[1] This discussion relies substantially on Joel Kotkin et al., *Housing the Future: the Inland Empire as Southern California's Indispensable Geography,* (2015 Symposium on the Affordability of Housing, Inland Valleys Association of Realtors, Ontario, CA: February 5, 2015). www.nationalcore.org.

California's opportunity region, the area needs to both reinvent itself and build on its past success."[2]

Since the closing of Kaiser Steel, Fontana has focused on housing development and the warehouse/logistics economic sector, the now-traditional mainstays of the Inland Empire. Fontana's unemployment rate has generally followed the recovery trend at the state and county levels, with an unemployment rate in 2015 at 6.5%, down from 14.7% in 2010. Despite a rebound in home prices, homebuilding permits have not returned to pre-recession levels in Fontana. In the post-Great Recession world, Fontana will need to "reinvent itself and build on its past success."

While the General Plan focuses on the municipality of Fontana, the city is affected by a variety of agencies, districts, and plans that transcend municipal boundaries, such as public education, transportation, water supply, and wastewater districts.

- **Public education.** Two public school districts serve most of the City of Fontana: Fontana Unified School District (FUSD) and the Etiwanda School District (pre-K to 8). FUSD serves most of the city and has an enrollment of 40,674 students in the 2015-16 academic year. About one-third of the FUSD students are classified as English learners and 82% receive free or reduced-cost lunch. The Etiwanda School District serves approximately 4,000 students in northwest Fontana. In addition to these two school districts, small areas of Fontana are covered by the Colton Joint Unified School District (southeast Fontana); the Chaffey Joint Union High School District (northern Fontana), and the Rialto School District (northeast).
- **Regional transportation and transit.** Fontana is a member of the San Bernardino Associated Governments (SANBAG)—the council of governments and the county transportation commission. SANBAG is responsible for planning and implementing a multi-modal transportation system for the county's 2.1 million residents through support for freeway construction projects, regional and local road improvements, public transit (rail and bus), ridesharing programs, congestion management, and transportation planning studies.
- **Transportation and sustainable communities policies.** Fontana is also a member of the Southern California Association of Governments (SCAG), which is made up of local governments, agencies and six counties, including San Bernardino County. It serves as the federally-designated Metropolitan Planning Organization for transportation planning in the region. SCAG's work also includes development of the state-mandated sustainable communities strategy, growth forecasts, and regional housing needs allocations.
- **Water supply and wastewater.** Fontana's drinking water supply is not controlled by the city and comes from a combination of surface water, subsurface aquifers, and water imported from Northern California. Wastewater services are supplied by a regional authority, the Inland Empire Utilities Authority, which also provides other services.

[2] Ibid., 14.

C. *Fontana's Heritage of Innovation And Affordable Opportunity*

Fontana, like every community, has a complex history and has experienced both positive and negative cycles. Within that history, however, is a heritage of innovation and affordability that at various points has supported opportunity and prosperity for working- and middle-class people.[3]

- **A.B.Miller and Fontana Farms.** Miller's combination of agribusiness and model small farms in Fontana differed from nearby citrus-farming agricultural communities, such as Redlands, Ontario, and Pasadena, which required significant capital investment from relatively wealthy individuals for success. The Fontana model offered land on the installment plan, a system of combining citrus, walnut or grape farming with poultry (for reliable incomes while tree crops were maturing), and provided inexpensive water, power, fertilizer and saplings from Miller's large agroindustry enterprise, Fontana Farms, which operated with economies of scale. Some 3,000 homesteads were purchased by 1930 and the system had attracted immigrants from Hungary, Yugoslavia, and Italy. The Fontana Farms agribusiness had the largest citrus and hog operations in the world at one point and was notable for what today is often called "industrial ecology," in which the waste products of one process are used as inputs to another process, with the goal of creating a closed-loop system. In the case of Fontana Farms, the most famous example is a contract with the City of Los Angeles to use its garbage to feed Fontana Farms' hog operation that produced meat and bacon for the Southern California market.
- **Henry Kaiser, the Kaiser Steel Mill, and Kaiser Permanente.** While the steel mill had some negative impacts common to industry during its operation between 1942 and 1983, including high-sulfur air pollution that hastened the end of citrus production, a key factor in Henry Kaiser's business approach was to focus on labor productivity by reducing worker turnover and absences, whether from sickness, shortages of transportation and housing, or strikes. By enrolling Kaiser workers in a prepaid health plan (the Permanente Health Plan), time lost to sickness was reduced . Kaiser Community Homes built affordable residential neighborhoods (similar to the Levittown communities in the East) in Fontana and in Ontario, as well as other cities. Kaiser Steel also worked with the United Steelworkers of America to develop an innovative gains-sharing plan in which labor shared in cost savings resulting from technology and labor productivity improvements. More recently, the new Kaiser hospital replacing the original 1955 hospital in Fontana has appeared on a number of lists as among the most advanced and sustainable hospital buildings in the world.
- **Housing opportunity after Proposition 13.** One effect of the 1978 passage of Proposition 13, which limited property-tax increases and assessments, was to increase the difference between housing costs in the coastal counties and the Inland Empire, helping to spark the 1980s boom in residential construction that drew people from the coast in

[3] This discussion relies substantially on Daniel Cornford (ed.), *Working People of California* (Berkeley: University of California Press, 1995), pp. 437-454. (available online at: http://ark.cdlib.org/ark:/13030/ft9x0nb6fg)

search of more affordable housing. The early 1980s were difficult in Fontana, with 10,000 workers losing their jobs when the Kaiser mill closed, but the closure in some ways made Fontana more appealing for residential construction because it ended the air pollution associated with the plant. The relative affordability of the Inland Empire compared to the coastal counties has continued through subsequent real estate booms and busts. [4]

While the innovations of the past existed in contexts different from today's world, a commitment to proactive and forward-looking policies and strategies aimed at making Fontana a prosperous and affordable full-service community for working families and individuals can draw on the city's heritage of innovation.

D. Fontana 5.0: What Is Fontana's Next Act?

The world of 2015 is different from the world of 2006, and the twenty years between now and 2035 will bring even more transformations. It is a much more competitive world. Fontana is not just competing on housing prices with coastal counties and the western Inland Empire, it is competing with neighbors such as Rancho Cucamonga and Ontario to create amenity-rich places that can attract and create a skilled workforce and 21st-century businesses to settle and grow. Both within the city and in the broader region, conditions have changed, making this a propitious moment for Fontana to plan for its next act.

- **Vacant land is entitled and redevelopment is in Fontana's future**. Much of the remaining vacant land in Fontana was approved for development before the housing crash and the specific plans and associated development agreements remain in force. Affordable housing continues to be a challenge in Southern California, and prospective home buyers face more stringent mortgage requirements. Disparities in income are also growing. Under these circumstances, a recovery of the real estate industry will not mean a return to the overheated housing economy of the early years of the 21st century. However, growth does not have to stop when "greenfield" development opportunities decrease. There are many opportunities for infill development and redevelopment in Fontana's older neighborhoods. This is a different type of development from the planned community model that has dominated since the 1980s.
- **Retail is being transformed**. Retailing is being transformed by online and mobile shopping, leading to the creation of new, smaller, and different retail formats as well as the model of shopping as entertainment—already visible in the Victoria Gardens development in Rancho Cucamonga.
- **Suburban office models are becoming obsolete.** Campus-style office parks no longer meet the needs of business and the younger employees that businesses need to attract. Office tenants are looking for amenities and walkability, even in more suburban environments.
- **The robots are coming**. The logistics industry is increasingly capital-intensive. Fulfillment warehouses are using more robotic han-

[4] See Thomas C. Patterson, *From Acorns to Warehouses: Historical Political Economy of Southern California's Inland Empire (*Walnut Creek: Left Coast Press, 2015), pp. 209-232.

dling, and some forecasters predict that self-driving vehicles in the coming decades could have a devastating impact on employment in the interstate highway trucking industry. In 2015, Amazon purchased a robotics company (now named Amazon Robotics), and hosted a competition for fulfillment robots, "the Amazon Picking Challenge." [5] Many jobs today in warehousing and logistics tend to be low-wage, less than full time, and/or temporary.

- **Overall demand for workers with at least a bachelor's degree will grow**. Projections for job growth show high demand for low-wage occupations requiring no more than a high school diploma and for occupations requiring at least a bachelor's degree. Mid-level occupations are not growing. College graduates earn more money over their lifetimes and experience much less unemployment.[6] Adults in the Inland Empire and Fontana today have relatively low levels of educational achievement, and the next generation will not be able to compete for more stable and well-paid jobs without higher educational achievement.
- **State frameworks promote development models that reduce greenhouse gases**. The State of California is committed to water conservation and reducing greenhouse gases—partly through new growth and development models in California communities, including Fontana. These new growth patterns emphasize compact and mixed-use development and varied transportation options.
- **Millennials want a variety of living options and amenities**. While the millennial generation has begun to grow in the Inland Empire, these young adults, born in the 1980s to the early 2000s, will make up nearly half of all workers in 2020. Many of them prefer to live in communities that have more housing, employment, entertainment, and transportation options than traditional bedroom suburbs, particularly educated young adults who have the skills to thrive in the knowledge economy of the future.
- **Fontana is expected to have over 250,000 people in 2035**. The city is ripe to become a "complete" community, a more full-service city, preserving its traditional suburban-style neighborhoods while offering more choices in housing, jobs, transportation, learning, and entertainment.

Suburban bedroom communities in California and all over the country are creating more diverse live-work-play-learn environments rather than focusing on single-use districts, whether those be housing developments, office parks, or shopping centers. These single-use districts are the development models of the 20th century, and they will continue to exist—but we do not need more of them. While many parts of Fontana are built out for the foreseeable future and the city will remain a stronghold of traditional single-family neighborhoods, the city still contains many opportunities for new approaches to development and mixing land uses. More diversity and choice in jobs, types of places to live, transportation, and quality-of-life amenities can make Fontana more competitive and successful well into the 21st century.

---

[5] Adam Robinson, "The Exploding Use of Robotics in Logistics and Manufacturing," July 6, 2015, www.cerasis.com; Eugene Demaitre, "Mobile Robots Become Essential to Competitive Logistics," www.roboticsbsinessreview.com; Tom Green, "Productivity Chasing Humans Out of Warehouses," www.roboticsbusinessreview.com.

[6] Hans Johnson, et al. "Will California Run Out of College Graduates?" Public Policy Institute of California, October 2015, www.ppic.org

The General Plan Update process, taking place as Fontana is recovering from the Great Recession, provides an arena to learn about both the challenges and the opportunities that will affect Fontana's future. This *Background Report* provides a realistic understanding of the social, economic, environmental and political context of both the city and the region to help identify how Fontana can use this plan to chart a course toward a more complex, 21st-century identity.

2. THE GENERAL PLAN UPDATE

A. What Is The General Plan?

All California cities are required to have a General Plan (GP) to guide the physical and economic development of the city over the next 20 years. The general plan is a strategic framework based both on the community's vision and goals and on the State's goals for the long-term development of California. Fontana's last General Plan was adopted in October 2003. This General Plan Update process will refresh the City's long-range blueprint for physical and economic development.

General Plans are comprehensive and holistic community planning documents whose purpose is to guide decision making. While the focus has traditionally been on the physical development of a community, modern plans of this type recognize that physical development depends on a community's values and its goals for neighborhood life, economic development, environmental sustainability, community design, and health and wellness, among other topics. The goals for these different aspects of community life will shape the physical development of the city.

A general plan has three fundamental parts:

- A vision for the future: what is our shared vision for our community?
- A plan: what strategies do we pursue to achieve the vision?
- An implementation program: what actions do we need to undertake to implement the strategies?

B. State Requirements for The General Plan

The State requires seven "elements" or chapters in general plans: land use, circulation, housing, conservation, open space, noise, and safety. Additional elements are permitted and elements can be combined or consolidated, as long as the mandated elements contain required content. The 2003 Fontana General Plan contains the following elements in addition to the mandated elements: community design; economic development; public facilities, services and infrastructure; parks, recreation and trails; and air quality.

The State has issued an update to its guidance document on creating general plans, which is in the public comment phase as of late 2015. Any new requirements will be incorporated into the Fontana Forward planning process.

The state planning framework. The State of California is committed to reducing greenhouse gas emissions. The state planning framework (SB 375 and SB 226) calls for integrating land use, housing and transportation to reduce greenhouse gases by diversifying land uses, developing multimodal transportation networks, and creating regional Sustainable Communities Strategies (SCS). Fontana is covered by an SCS created by the Southern California Association of Governments (SCAG). The Fontana GP Update will need to demonstrate that it is consistent with the regional SCS. Once adopted, the new GP will provide for streamlined

CEQA approvals or exemptions for projects consistent with the State's planning framework.

The Environmental Impact Report (EIR) for the General Plan Update. Whenever a community adopts or amends a general plan or a general plan element, it is subject to the California Environmental Quality Act (CEQA), usually requiring an environmental impact report (EIR). The Fontana General Plan Update will be accompanied by an EIR prepared concurrently with the plan. The purpose of the EIR is to identify potential significant environmental impacts of proposals, alternatives with fewer adverse impacts, and potential ways to reduce or avoid environmental damage, thereby addressing significant environmental impacts and mitigation options. The EIR evaluates the proposed plan's effect on the physical environment as it is now, and the impact on the environment that would exist under the proposed plan, including secondary and cumulative effects.

C. Fontana's 2003 General Plan

The 2003 Vision. The vision for Fontana in the 2003 General Plan is a short statement with themes of growth, unity, quality, and connectivity:

> *"Fontana is a modern city benefiting from rapid growth while preserving its hometown atmosphere. Our City is unified by a strong sense of community and a common goal: to be second to none in achieving high standards of quality as we grow and develop. We take great pride in our safe and attractive residential neighborhoods, which are complemented by recreational and educational facilities, and diverse and growing employment opportunities. Our Downtown and Civic Center district is the lively, thriving heart of Fontana. Our whole City is served by a network of efficient roads and infrastructure that connects us into a complete community in which we can live, learn, work and enjoy the fullness of life that Fontana has to offer."*

The 2003 Vision also gives importance to a thriving downtown and additional, diverse jobs. While succinct, the Vision does not provide much guidance in terms of the character of quality growth and development, or what the "fullness of life" means in Fontana. The City was successful in implementing many important aspects of the 2003 General Plan that called for new community and transportation facilities and initiatives to reduce crime. The recession and market crash affected the City's ability to implement some actions.

D. Major Goals of The 2003 General Plan

The major goals of the 2003 GP are shown in Exhibit 1. These goals expand on the themes of growth, unity, quality, and connectivity found in the 2003 Vision. A number of the goals are mutually reinforcing, such as the goals for bicycle and pedestrian connections, improved public transportation, and air-quality improvements.

EXHIBIT 1 **GOALS OF THE 2003 GENERAL PLAN**

General Plan Element	*Goals*
HISTORIC RESOURCES	Preservation and adaptive re-use of historic resources
	Preservation of archaeological resources
CONSERVATION AND OPEN SPACE	Preservation of environmentally sensitive, natural open space
	Multiple use of natural spaces for recreation and other open space uses
	Multi-use trail network on utility corridors
	Mixed-use open spaces in the city's core areas
	Attention to wildfire danger
ECONOMIC DEVELOPMENT	Fiscally healthy balance of land uses
	Improved and diversified industrial base
	Revitalized downtown
	Strengthened workforce
	Optimum mix of retail and services
	Strategic planning for economic development
MOBILITY	Improved thoroughfares and transportation routes, including highway interchanges
	City linked to regional system of bikeways and multi-use trails
	Public transit with Bus Rapid Transit
	Truck route plan reviewed
	Railroad crossings reviewed
INFRASTRUCTURE AND ENERGY	Efficient water resource use
	Xeric landscaping on public and private lands
	Water shortage contingency plan
	Solid waste reduction and recycling programs
	Utilities with high levels of service at competitive rates
PUBLIC FACILITIES AND SERVICES	High-quality schools with adequate facilities and capacity
	Law enforcement and fire protection
	Healthcare services for all segments of the population
	New Civic Center Campus with library, civic center, and auditorium
PARKS, RECREATION AND TRAILS	Parks for all segments of the population
	Adequate parks in newly developed areas
	Safe and well-maintained parks
	Parks jointly used with school districts
	Parks conveniently located and accessible to residents
	Bike and pedestrian uses supported
	Parks and trails funded through the capital improvement program
SAFETY	Risk from seismic and geologic hazards minimized
	Risk from flooding hazards minimized in line with most recent FEMA Flood Insurance Rate Maps (FIRM)
	Risk from urban and wild fire minimized
	Risk from contamination from hazardous materials minimized
	Plans for emergency response and recovery prepared

EXHIBIT 1 **GOALS OF THE 2003 GENERAL PLAN**

General Plan Element	*Goals*
AIR QUALITY	Air quality improvements achieved while sustaining economic growth
	Ground transportation generates minimum pollutants
	Energy consumption and reduced resulting in reduced emissions
	Release of particulate emissions from construction, roads and buildings minimized
LAND USE, URBAN DESIGN AND COMMUNITY DESIGN	Balance of land uses, including mixed-use development
	Land uses are compatible, including review of impact rules
	"One Fontana" program for physical and aesthetic unity with consistent character
	Infill and revitalization of core areas
	Revitalized downtown
	Unifying design theme while creating several distinct neighborhoods
	View corridors preserved with design guidelines
	Appearance of major arterials enhanced
	Vibrant, identifiable downtown created
	New Civic Center Campus created
	New development has high-quality, contemporary, unifying design elements
	Design standards used to minimize conflict and spillover effects of differing land uses
HOUSING (2014)	2004-2014 shortfall in affordable housing production
	Actions taken to promote development of 4,282 units for both seniors and very-low- and low-income households

Major Accomplishments of the 2003 General Plan

2003 GENERAL PLAN VISION STATEMENT

Fontana is a modern city benefiting from rapid growth while preserving its hometown atmosphere. Our City is unified by a strong sense of community and a common goal: to be second to none in achieving high standards of quality as we grow and develop. We take great pride in our safe and attractive residential neighborhoods, which are complemented by recreational and educational facilities, and diverse and growing employment opportunities. Our Downtown and Civic Center district is the lively, thriving heart of Fontana. Our whole City is served by a network of efficient roads and infrastructure that connects us into a complete community in which we can live, learn, work and enjoy the fullness of life that Fontana has to offer.

MAJOR ACCOMPLISHMENTS



Healthy Fontana program started in 2004



Lewis Library and Technology Center opened in 2008



Center Stage Theatre renovated and opened in 2008



Fontana named **one of 20 safest communities with over 200,000 residents in the U.S.** in 2013



First Zero Net Energy (ZNE) neighborhood in California in 2015



Development Services Organization building opened in 2007



Fontana Park and Aquatic Center opened in 2008



Pacific Electric Trail opened in 2012



Three highway interchange improvements in 2014

3. WHO WE ARE: POPULATION TRENDS

Now the third-most populous city in the Inland Empire, after Riverside and San Bernardino, Fontana more than doubled its population between 1960 and 1980, and more than quintupled its population between 1980 and 2014. This tremendous growth has been made up of families seeking an affordable suburban lifestyle. Over the next 20 years, will these families decide to stay in Fontana as they get older, or will a new cohort of young families replace them? The Southern California Association of Governments (SCAG), in its 2016-2040 Regional Transportation Plan, projects a Fontana population in 2040 of 280,900 with 74,000 households. This assumes an average household size of 3.8 persons, slightly lower than the 2015 estimated average of 4.0 persons. Population projections are based on interpretation of historical trends in natural increase (births and deaths) and net migration. Future population and household growth in Fontana will also depend on housing and employment markets.

☞ *Findings*

- **Fontana is a growing community of 204,312 people.**
- **Fontana is the 21st largest city in California, 3rd largest in the Inland Empire and 2nd largest in San Bernardino County.**
- **Fontana has a young population, with a median age of 29, compared to the state median of 36.**
- **Fontana is a family community: 58% of total households include children under 18.**
- **Fontana has more children and fewer seniors by percentage than the county or the state.**
- **The average household size in the city is 4.0 people, compared to the state average of 2.9 people.**
- **Most current residents came to Fontana recently. Seven percent arrived in 2010 or later, and 90% arrived in 1990 or later.**
- **Fontana is racially diverse: 46% of the population identifies as White, 9% as Black or African-American, and 36% identifies as "other" or two or more races. The last category indicates multiracial identify, often chosen by persons of Hispanic background.**
- **Hispanics can be of any race. Fontana is 69% Hispanic.**
- **SCAG projected (as of 2015) that Fontana's population in 2040 would reach 280,900. That means the city would have nearly 74,000 more people 25 years from now, living in 20,000-24,000 new households, depending on average household size.**



A. Population Trends[7]

EXHIBIT 2 **FONTANA POPULATION 1960-2014**

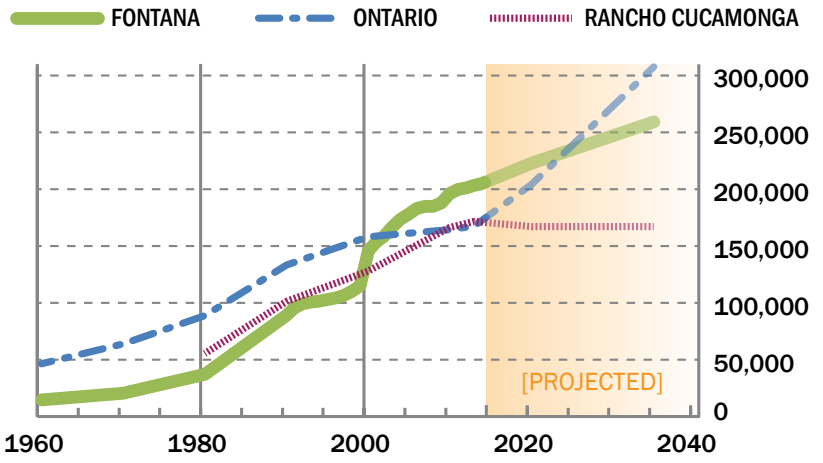
Year	*Population*	*Growth*
1960	14,659	
1970	20,673	41%
1980	36,804	78%
1990	87,535	138%
2000	128,929	47%
2010	196,009	52%
Est. 2014	206,950	4%

Source: U.S. Census Bureau; ACS (2014)

In 1960, at the time of the city's first census after incorporation in 1952, the City of Fontana was still a relatively small community of 14,659 people. As southern California attracted millions of migrants from other parts of the country after World War II, Fontana's population grew almost 2.5 times between 1960 and 1980. In the next twenty years, after Kaiser Streel closed in 1983 and the city focused on residential development, population grew 3.5 times to reach 128,929 in 2000.

Fontana's growth in residential population since 2000 has outpaced the growth in population by nearby communities and San Bernardino County. Between 2000 and 2015, Fontana's residential population increased approximately 58%, compared to an overall 23% growth rate for San Bernardino County. During this period the City annexed 2,912 acres with a population of 13,817 people. Not counting this population, the city grew 50% in the period 2000-2015. In the same time period, nearby cities of Ontario, Rancho Cucamonga, and San Bernardino grew by 7%, 36%, and 15%, respectively.

EXHIBIT 3 **FONTANA POPULATION 1960-2014**



The Southern California Associated Governments (SCAG) projected gradual population growth for San Bernardino County, which would reach 2,731,900 residents in 2040. SCAG develops, refines and maintains

[7] Primary data sources include U.S. Census Bureau, the California Department of Finance (DOF), the Southern California Association of Governments (SCAG) and the Department of Housing and Urban Development (HUD). These data sources are the most reliable for assessing existing conditions and provide a basis for consistent comparison with historical data and the basis for forecasts. This section also includes data from the 2009-2013 American Community Survey 5-year Estimates (ACS). The ACS provides estimated data based on surveys between the decennial censuses.

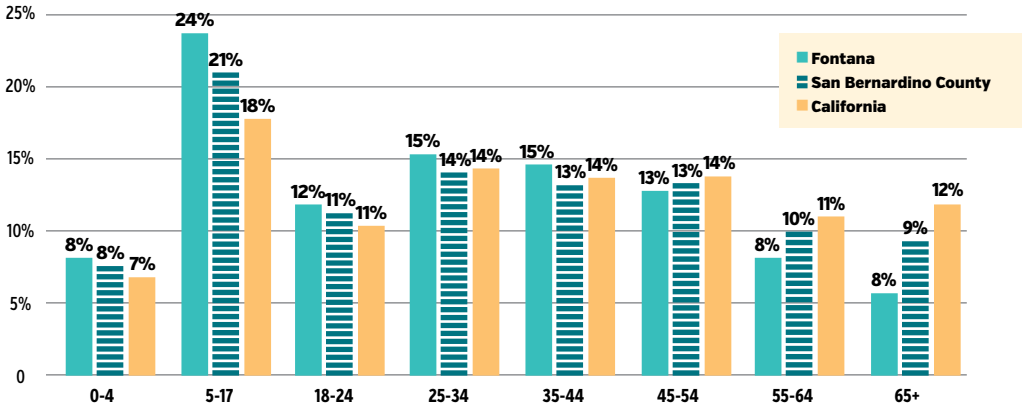


a regional population-forecasting model. Projections are used for federal- and state-mandated long-range planning efforts. SCAG's most recent forecast for Fontana, incorporated in the 2016-2040 Regional Transportaiton Plan, estimates the 2040 population at 280,900.

B. Age

Fontana's attraction for families since the 1990s and its identity as a bedroom community are reflected in the city's age profile. The median age of residents in 2013 was 29.4 years, below both the state median of 35.7 and the San Bernardino County median of 32. Fontana's largest age demographic in 2013 was the 5-17 age group, representing 24% of the total population. While Fontana's population has a similar distribution to San Bernardino County and California among the 25-34 and 35-44 age groups, Fontana has a higher-than-average youth population (0-4, 5-17, and 18-24) and lower-than-average senior population. Just 6% of the city's population is over the age of 65, compared to 9% of San Bernardino County, and 12% of California. If today's Fontana parents decide to stay in the city after their children grow up, the city is likely to have a higher proportion of people over the age of 65 in the next few decades. However, Fontana is also likely to continue to attract new households with children.

EXHIBIT 4 **FONTANA AGE DISTRIBUTION, 2013**

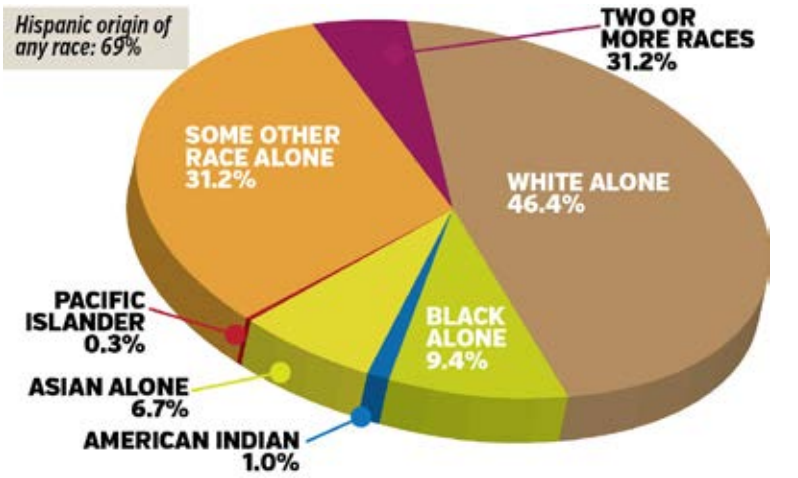


Note: Bars representing the same value may have different heights due to rounding.
Source: Census Bureau, American Community Survey 2009-2013, estimates.

C. Race And Ethnicity

Like Southern California and San Bernardino County, Fontana is racially diverse. Fontana's racial distribution has similar characteristics to the those of the county and the state. The majority of Fontana residents (69%) identify as Latino (any race), compared to 50% of San Bernardino County residents and 38% of California residents.

EXHIBIT 5 **FONTANA RACE AND ETHNICITY**



Source: U.S. Census Bureau, American Community Survey 2009-2013, estimates.
Note: The U.S. Census Bureau defines race and ethnicity as two separate and distinct identities. One Census question asks respondents which socio-political race [among categories shown in this chart] they most closely associate with, and a separate question asks whether they associate with "Hispanic, Latino, or Spanish origin" or not [defined as ethnicity]. Sources: U.S. Census Bureau [2010]; ESRI [2015]

D. Households

The California Department of Finance estimated that as of January 1, 2015, Fontana had 50, 197 households with an average of 4.06 persons per household, well above the State average of 2.95 persons per household. [8]

The U.S. Census distinguishes between "family households" and "non-family households." Family households include people who are related by blood, marriage, or adoption. This means that a married couple with no children in the home is a family household. Non-family households include single-person households and households where unrelated people live together—for example, a household of roommates.

The vast majority of households in Fontana today are family households. Eighty-five percent of Fontana households are family households, of which 61% are married couple family households (with or without children in the home). Single parents live with their own children under 18 in almost 14% of households and another 10% of family households are headed by men or women without married spouses but with other family

[8] California Department of Finance, E-5 City/County Population and Housing Estimates, 1/1/2015)

EXHIBIT 6 **FONTANA AGE DISTRIBUTION, 2013**

Households By Type	*% of Total Households*
Families (related by blood, marriage or adoption)	85.7%
With own children under 18 years	50.5%
Married-couple family	61.2%
With own children under 18 years	36.8%
Male householder, no wife present, family	7.7%
With own children under 18 years	4.5%
Female householder, no husband present, family	16.7%
With own children under 18 years	9.2%
Nonfamily households	14.3%
Householder living alone	9.7%
65 years and over	3.4%
Households with one or more people under 18 years	58.0%
Households with one or more people 65 years and over	16.5%

Source: U.S. Census ACS 2009-2013)

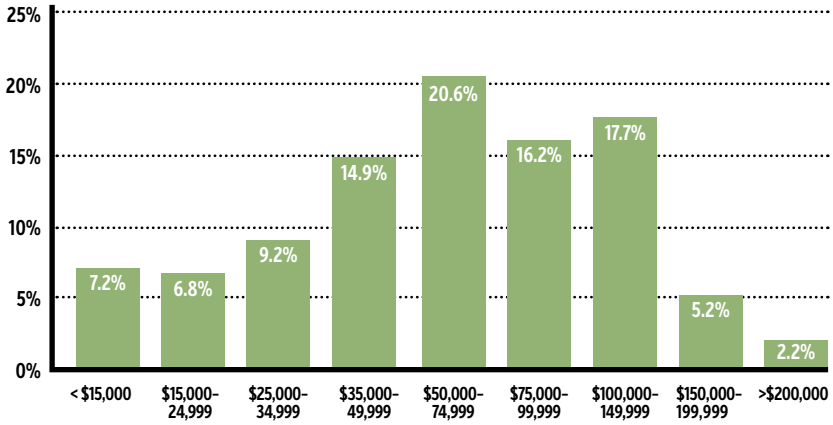
members. Fontana has relatively few non-family households, with fewer than 10% single person households. Overall, 58% of households include at least one person under 18 years old, while 16% include at least one person 65 or older.

E. Incomes

Fontana is a solidly middle-income community, with an estimated median household income in 2014 of $64,995 (2010-2014 ACS), slightly above the state median of $61,933.[9] (The median means half of the households have higher incomes and half of the households have lower incomes.) The average household income in 2013 was estimated at $75,825, which indicates that there are not a large number of high-earning households

[9] U.S. Census ACS 1-year survey, 2014.

EXHIBIT 7 **FONTANA HOUSEHOLD INCOME DISTRIBUTION**



Source: U.S. Census Bureau, ACS 2009-2013

that would make the average a great deal higher than the median.[10] Median household income in Fontana is expected to grow 2.73% annually between 2015 and 2020, a slower pace than the state's projected 3.36% income growth rate.

Approximately 31,450 residents, or 16%, live in poverty, the same percentage as the state, but higher than the national poverty rate of 15.4%. San Bernardino's poverty rate is higher at 18.7%. An estimated 21% of children and youth (people under 18 years old) in Fontana live in poverty, as do 10% of people 65 or older.[11]

Students from households with incomes of up to 130% of poverty level are eligible for free lunches at school, and students from households with incomes of up to 185% of poverty level are eligible for reduced-price meals. (The poverty level guidelines for this program are based on the number of persons in the family.) Eighty percent of Fontana K-12 students qualify for free or reduced-price lunch at school, a greater proportion than in the county or state.

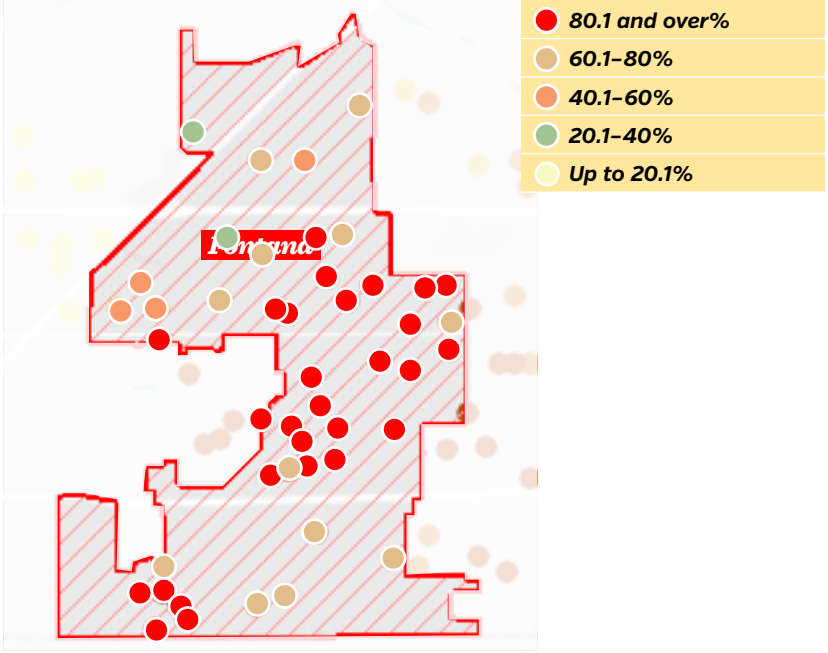
[10] U.S. Census ACS 2009-2013
[11] *Ibid.*

FIGURE 8 **STUDENTS ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCHES**

Report Area	*Total Students*	*Number Eligible for Free/Reduced-Price Lunch*	*Percent Eligible for Free/Reduced-Price Lunch*
Fontana	41,709	33,405	80.1%
San Bernardino County	410,285	282,313	69.0%
California	6,213,194	3,478,407	56.3%
United States	49,936,793	25,615,437	51.7%

Source: National Center for Education Statistics, NCES–Common Core of Data. 2012-13.

EXHIBIT 9 **STUDENTS ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCHES**

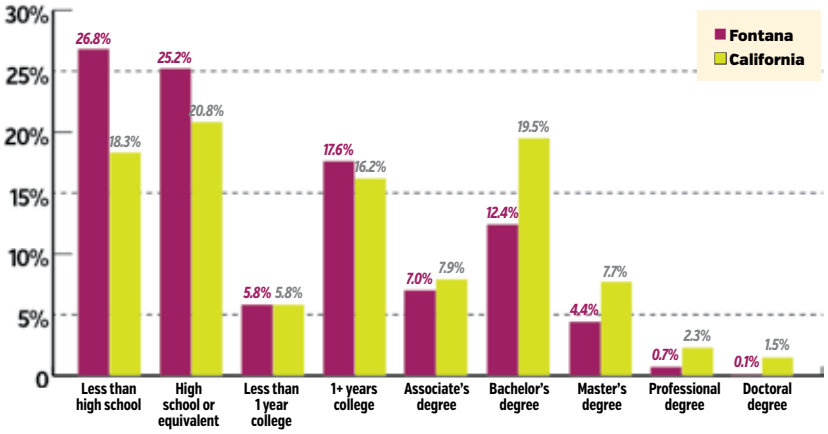




F. Educational Attainment

Compared to the state as a whole, most Inland Empire communities have lower rates of educational attainment. Fontana is no exception. Most adults in Fontana do not have a post-secondary degree of any kind (associate's, bachelor's or graduate degree).

EXHIBIT 10 **RESIDENTS 25 YEARS AND OLDER BY EDUCATIONAL ATTAINMENT**



4. LIVING IN FONTANA

This section includes a broad array of conditions that influence quality of life for Fontana residents. The city's historic heritage, older and newer housing options, natural heritage and parks, health and wellness, and the community services that provide amenities and activities all shape what it is like to live in Fontana.

A. Historic Heritage

Fontana has archaeological remains of the area's Native American presence in the foothills of the Jurupa and San Gabriel mountains and a limited number of historically significant structures or sites more than 50 years old.

☛ *Findings*

- **There are 3 individual National Register of Historical Places (NRHP) sites in the City of Fontana.**
- **There is one California Register of Historical Landmarks site in the City of Fontana.**
- **There are at least 12 California Points of Historical Interest in the City of Fontana.**
- **A Historical Landmarks list for the City of Fontana was created by the Fontana Historical Society circa 1990.**
- **Fontana currently has no regulatory protections against demolition for significant historic structures beyond coverage under the Section 106 of the National Historic Preservation Act (NHPA) for federally funded projects and the California Environmental Quality Act (CEQA) for state-funded projects.**
- **The Fontana Historical Society is working to increase awareness of the city's historic assets.**
- **The City has obtained property at Sierra Avenue and Spring Streets for a Fontana Historical Museum to be run by the historical society.**
- **Downtown is the hub of historic-era buildings and structures.**

Early History. The area of the present City of Fontana was first inhabited by Native Americans known as the Yuhaviatam (called the Serrano ("Mountain") Indians by the Spanish) in approximately 1000 B.C. Archeological remnants are present in the form of petroglyphs, caves, and habitation sites, but most evidence of their lives on the valley floor has been lost to development over the last two centuries.

While the area was nominally under Spanish and then Mexican rule in the eighteenth and early nineteenth centuries, and became part of the United States after 1848, there was little settler activity in the area until the 1870s. A small Mormon settlement lasted a few years in the 1850s, but continuous settlement began with the arrival of the Sansevain brothers in 1874, who began moving their grape and wine-making operations from Los Angeles to the northern part of present day Fontana where a small

settlement grew at the mouth of Lytle Creek and San Sevaine Canyon. By the mid-1890s there were three small centers within a rural landscape: Rosena, at today's downtown, Grapeland at the foot of the San Gabriel Mountains and the Declezville quarry at the foot of the Jurupa Hills.

The Birth of Fontana. The year 1905 saw the arrival of the most important individual in the development of modern Fontana, Azariel Blanchard (A.B.) Miller. He purchased 17,000 acres in the modern Fontana area and began transforming his land into orchards, poultry and livestock farms. Irrigation made the Fontana desert into an agricultural oasis. Miller created a unique combination of industrial agriculture and real estate development that allowed working class and middle class city dwellers in Los Angeles to buy a small farm in installments, plant trees and raise poultry (bought from Fontana Farms), and buy water and power from Miller's water and power companies. Immigrants from Hungary, Slovakia, and Sicily were among the small farmers.



Orange groves in Fontana

A.B. Miller was the founder and president of Fontana Farms (citrus), Fontana Union Water Company, Fontana Power Company, B. B. Company, Miller Livestock Company, and Fontana Land Company. Rosena was renamed Fontana in 1913 and the Sierra Avenue downtown developed in the 1920s and 1930s. From 1915 to 1920 Fontana Farms began to actively plant citrus, with an original planting of 2,000 acres, giving Fontana the largest single citrus grove in the world. A.B. Miller established a hog ranch in the Declez region of the city near the Jurupa Hills in 1921, feeding the hogs for a time through a garbage contract with the City of Los Angeles. Citrus growers raised poultry as a complementary business for fertilizer and year-round income from eggs. In many respects, A.B. Miller's business model was a precursor of what today is called "industrial ecology." The waste products produced by his operations were used as inputs for production of other products.

Fontana as an industrial community. Fontana entered the industrial age in 1942 when Henry J. Kaiser established the Kaiser Steel mill to aid the war effort on the former hog ranch in what is now the city's sphere of influence. This was the first steel mill west of the Mississippi and the first steel mill independent of US Steel, Bethlehem Steel, and the other big steel companies in the east. Kaiser Steel had good relations with the steelworkers union and the Kaiser health system was established to serve the steelworkers. Experienced steelworkers were attracted to





Left: Fontana Farms citrus packing plant/ Fontana Citrus Association (FCA Building).
Right: as it exists today, used as a school district storage warehouse

Fontana from Pennsylvania, West Virginia and eastern Kentucky. As the mill attracted workers, the area between downtown and the steel mill became increasingly dense, and agriculture began a slow decline as land was converted to residential and suburban commercial uses. The city incorporated in 1952, not including the steel mill itself. Fountain Square, the first suburban shopping mall in San Bernardino County, was built in 1960 near the corner of Foothill and Sierra.

After the death of Henry Kaiser, management neglected modernization of the mill as the American steel industry passed through a period of intense downsizing because of competition from cheaper foreign steel. The mill ceased operations in 1983.

Residential growth. With the closing of the Kaiser Steel mill in the 1980s, the economic growth of the city depended on new residential growth. City officials used the Redevelopment Agency to attract developers and give them incentives to build in Fontana. The first specific plan and development agreement was the SouthRidge residential area between the Jurupa Hills and Jurupa Avenue. Residential development continued into the northern and southern areas of Fontana during the late 1990s and beyond as the city has evolved into a bedroom community of the larger Los Angeles region. Downtown commercial activities declined as commercial developments closer to new freeways and housing drew shopping away from the historic downtown.

Historic Resources

Fontana's cultural and historic legacy is evident in its remaining historic landmarks. Nevertheless, the area lacks a cohesive cultural narrative and identity. In April 1974, the Fontana Historical Society was formed out of concern about the loss of historical resources. Its mission is to collect, preserve, research, and provide access to the knowledge of Fontana's past. This 501(c)3 nonprofit is staffed by volunteers. Preservation of Fontana's historic and cultural assets can infuse local identity with a stronger sense of its historic roots, and can create a critical mass of cultural resources.

Fontana's historic assets are landmarks—the downtown corridor and neighborhoods/blocks, as well as individual structures of special historic value. Some of these historic resources have been moved from their original sites or are surrounded by incompatible development or vacant land. Although a handful of the area's historic assets are listed on the National Register of Historic Places or state registers as landmarks or points of historical interest, there is almost no regulatory protection of historic





Above and on the facing page: four views of Sierra Avenue in the early and mid-20th century.

places against significant alteration or demolition in Fontana. Downtown Fontana is probably the city's most recognized and publicly-valued historic asset, yet many of its historic structures are threatened by neglect, incompatible redevelopment, and deferred maintenance.

Individual National Register of Historic Places and Landmarks

The National Register of Historic Places ("National Register") is the nation's official list of significant historic properties. Listing of a historic district on the National Register denotes the architectural, historical, cultural, ethnic, or other significance of a site that is at least 50 years old. Being listed is an honor and also qualifies the owner for certain tax incentives to offset the cost of restoration. However, National Register designation provides no regulatory protection against demolition or exterior change—except in the case of federally-funded projects, which are required to undertake a special review process if a the proposed project may affect a designated historic district or landmark. Otherwise, owners of National Register properties are free to do with their property whatever they wish, including demolition, unless subject to local regulation.

There are three individual National Register historic places in Fontana:

- **The Fontana Farm Company Ranch House, Camp No. 1** dates from 1905-1906 and is located at 8863 Pepper Street. The Fontana Farm was started in 1905 by A.B Miller near the Santa Fe Railroad lines. The camp originally consisted of a ranch area, with barns and barracks for 200 men, as well as sheds, stables, pens, corrals, and the foreman's house.
- **The Fontana Pit and Groove Petroglyph Site** is a prehistoric archaeological site of national significance. It is located within the Mary Vagle Nature Center property and is a protected resource. There are relatively few pit-and-groove sites in southern California, making this resource very rare.
- **Bono's Restaurant and Deli,** located at 15395 Foothill Blvd., is the most recently listed national historic landmark in Fontana. The restaurant opened in 1936 to serve travelers on U.S. Route 66, and originally operated as a produce stand. In 1943, increased traffic on the highway prompted the owners to expand , and the current building was constructed as a full-service restaurant. As Fontana's Italian immigrant community grew in the 1940s, the restaurant also became a local source of Italian foods previously unavailable in the area. The Big Orange, a 7-foot tall orange-shaped citrus stand, is located on







The Fontana Farm Company Ranch House, Camp No. 1, at 8863 Pepper Street, is a National Register Of Historic Places Landmark.

the property of the restaurant. The structure was originally located 3 miles to the east but was purchased in the 1990s and moved to its current site.

California Historical Landmarks

There are 12 California Historical Landmarks in the city, some of which are also National Register sites. California Historical Landmarks (CHLs) are buildings, structures, sites, or places that have been determined to have statewide historical significance by meeting at least one of these criteria:

- Approved for designation by the County Board of Supervisors or the City/Town Council in whose jurisdiction it is located;
- Recommended by the California State Historical Resources Commission; or
- Officially designated by the Director of the California State Parks.

Fontana has one CHL, the 1928 U.S. Rabbit Experimental Station . The U.S. Government established the first and only experimental station in the United States dedicated solely to research into the breeding and raising of rabbits on a five-acre property donated by A.B. Miller. The station successfully pioneered new techniques of rabbit care and breeding. .

California Points of Historical Interest

California Points of Historical Interest (CPHI) are sites, buildings, features, or events of local significance. CPHIs designated after December 1997 and recommended by the State Historical Resources Commission are also listed on the California Register of Historic Places. To be eligible for designation as a CPHI, a resource must meet at least one of three criteria:

- Be the first, last, only, or most significant of its type within the local geographic region (City or County);
- Association with an individual or group having a profound influence on the history of a local area; or
- A prototype of, or an outstanding example of, a period, style, architectural movement or construction, or an example of the more notable works or the best surviving work in the local region of a pioneer architect, designer, or master builder.

Archaeological Sites

Prehistoric and historic-era archaeological resources have been identified throughout Fontana, including numerous sites and isolates. The location of these resources is restricted in order to limit disturbance of the sites. Information and locations on the sites and isolated is held on file at the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System (CHRIS). Prehistoric sensitivity in Fontana is mostly concentrated in the southern and northern portions of the city. A cluster of prehistoric sites was previously identified in the southern portion of the city and has been interpreted by archaeologists to be the remains of an important Native American village with associated campsites and habitation sites nearby. The majority of the prehistoric sites within the city represent evidence of Native American food-processing activity, such as bedrock milling features, which are common to the area. All of the prehistoric sites previously identified are clustered along the foothills of the San Gabriel Mountains and the Jurupa Hills.

Historic-era archaeological sites in the city consist mainly of residential areas, although irrigation systems, transportation features, and other types of resources are also represented. Sites are scattered throughout the city. The historic U.S. Route 66 (now Foothill Boulevard), the former Kaiser Steel Mill, and the Boulder-Los Angeles power transmission lines are among previously recorded archaeological resources. The Southern Pacific Railway (now Union Pacific), completed in the 1870s, and the Atchison, Topeka, and Santa Fe Railway (now Burlington Northern and Santa Fe), completed in the 1880s, have also been recorded as sites.

In sum, there are over 80 previously recorded archaeological sites in the city. These sites are formally recognized on Department of Parks





Left, the U.S. Rabbit Experimental Station. Right, Fontana hog ranch

and Recreation (DPR) 523 site records and their information is kept in perpetuity at the SCCIC of the CHRIS. The sites require mitigation, evaluation, and/or protection for all state and federal undertakings that have the potential to impact them. Access to these sites is protected and therefore not publicized widely because of the danger of theft and destruction of the resources. Information on the sites is typically accessed by a professionally qualified archaeologist.

EXHIBIT 11 **DESIGNATED HISTORIC SITES**

POINT NUMBER	HISTORIC NAME	ADDRESS
NATIONAL REGISTER OF HISTORIC PLACES		
—	Fontana Farms Company Ranch House, Camp No. 1	8863 Pepper Street
—	Fontana Pit and Groove Petroglyph Site	Address restricted
—	Bono's Restaurant and Deli	15395 Foothill Boulevard
CALIFORNIA REGISTER OF HISTORIC LANDMARKS		
—	United States Rabbit Experimental Station	8384 Cypress Avenue at Seville Avenue
CALIFORNIA POINTS OF HISTORICAL INTEREST		
P278	Baseline Road	Baseline Road
P286	San Bernardino-Sonora Road	San Bernardino Avenue
P452	Kaiser Steel	—
P463	South Fontana Indian Pit and Groove Petroglyph Site	National Register listing
P595	Fontana Company Tract Office/Library/C of C Building	—
P596	Declez Ranch, Felice Paglinso Winery	—
P597	Fontana Woman's Club	16880 Seville Avenue
P598	Fontana Community Church	8316 Sierra Avenue
P594	Fontana Farms Ranch House	National Register listing
P617	Sinclair Commercial Block	8150 Sierra Avenue
P626	A.B. Miller Community Park and Plunge	17004 Arrow Boulevard
P756	Grapeland Homesteads and Water Works	—
FONTANA POINTS OF HISTORICAL INTEREST DESIGNATED BY THE CITY COUNCIL		
—	Fontana Fire Department	16980 Arrow Boulevard
—	Hilton/Crawford Residence	8308 Bennett Avenue
—	Nicholas Sticksel Residence	16805 Ivy Avenue
—	Fontana Jr. High School Auditorium	8425 Mango Avenue
—	Fontana Citrus Association Citrus Warehouse	8426 Mango Avenue
—	Fontana Mercantile	8435 Sierra Avenue
—	Fontana Theatre	8463 Sierra Avenue
—	Crawford's Drug Store	8554 Sierra Avenue
—	Pacific Electric Depot & Freight Depot	16824 Spring Street
—	Commercial	8661 Wheeler Avenue
—	Bullock Ranch	Cherry Avenue at Duncan Canyon Road
—	Residence	9310 Palmetto Avenue



Historic Places
October 2015
Data source: City of Fontana, National Register of Historic Places 2015

Fontana Forward

0 250 500 1,000
Scale 1:7,500 Feet

Route 66

A portion of historic Route 66, also known as Foothill Boulevard, runs through Fontana. Route 66 was one of the original highways in the United States, established in 1926. The highway became one of the most famous roads in America, originally running from Chicago and ending in Santa Monica, covering a distance of 2,448 miles. The road served as a major route for those who migrated west, especially during the Dust Bowl of the 1930s, and it supported the economies of the communities through which it passed before the interstate era. The area of Foothill Boulevard in Fontana began to lose much of its historic business and character in the 1970s as freeways were built and became the preferred route of traffic movement. Foothill Boulevard remains the second most traveled street in Fontana, but it has lost most of its historic character. Strip commercial development on the street has "Anywhere USA" design characteristics, and there are a number of underutilized or vacant sites.

Local Historic Resources and Designated Sites

The Fontana Historical Society seeks to identify, document, and encourage preservation. The Historical Society occupies a building at 16830 Spring Street that is owned and operated by the Fontana Community Services Department. This building contains numerous archives and data. The Historical Society is also in possession of the archives and artifacts from the former Kaiser Steel Museum in Rancho Cucamonga, which it hopes to display once the Fontana Museum is created.

The Historical Society compiled a list of potential historical sites that were considered significant to the local community. In 1992 the City Council designated some of these properties as historically significant but without any protections. Fontana does not have a historic preservation commission, a historic landmarks commission, local historic districts or landmarks, nor does it have ordinances or programs that promote preservation or protection of historic structures, such as a demolition-delay ordinance that would require that efforts be made to find potential uses for historic structures before a demolition permit is issued. Every local government in California has the authority to adopt a local ordinance that provides regulations applicable to historic properties.

Accomplishments since the 2003 General Plan

The 2003 plan's goals for historic preservation generally promoted preservation of historic resources, adaptive reuse of historic resources, and preservation of archaeological resources. Major accomplishments include the rehabilitation of the Center Stage Theatre, inclusion of historic preservation in the city code, and acquisition of a site for a Museum of Fontana History.

B. How We Live: Housing

The Housing Element of a general plan is the only element that requires review and certification by the State of California, which has identified attainment of a decent home and living environment for every resident as the State's primary housing goal. In practice, this means that the Housing Element is organized according to State requirements and fo-

cuses primarily on provision of housing affordable to low- and moderate-income households.

The State requires that municipalities update the housing element of their general plans every five years. A Fontana Housing Element was adopted and approved by the State in 2006 for the 2006-2014 period and again in 2014 for the period 2014-2021 to satisfy this requirement. The 2014-2021 certified Housing Element serves as the housing element in the update of the general plan being prepared in 2015-2016.

Fontana had a shortfall of 4,282 affordable units that were to be created during the 2006-2014 period (most of which had not been created as of 2015). The current Housing Element commits the City to creation of another 3,137 units affordable to very-low-income and low-income households (as defined by the State). This is a significant number of assisted units to produce, especially since redevelopment agencies were dissolved statewide in 2012 (eliminating Housing Set-Aside funds), which makes financing affordable units more difficult.

The 2014 Housing Element reflects data from 2013 or earlier. The existing conditions data in the discussion below includes more recent data.

☛ *Findings*

- **There are an estimated 52,969 housing units in Fontana, with a 5.2% vacancy rate.**
- **Eighty-two percent of housing units are single-family homes.**
- **Over two-thirds of Fontana households own their homes.**
- **Over two-thirds of Fontana housing units were built after 1980.**
- **The median home value in Fontana was $312,500 as of 2015.**
- **Fontana home values rose 5.3% in the period 2014-15, and are predicted to rise 4.7% in 2016.**
- **The median rent for a 2-bedroom housing unit in late 2015 in Fontana was approximately $1,300, according to real estate website Trulia.com.**
- **The city has a significant regional allocation of affordable housing units in its State-certified Housing Element, which may be difficult to finance.**

According to the California Department of Finance, as of January 1, 2015, there were the 52,969 housing units in Fontana, of which 94.8% were occupied and 5.2% were vacant. Vacancy rates are an indicator of housing supply and housing demand. Low vacancy rates produce greater upward price pressures and suggest households may have trouble finding housing with an affordable monthly payment. A higher vacancy rate indicates downward price pressure and may suggest an oversupply of housing units. A four to five percent vacancy rate is considered "healthy."

In 1990 the City of Fontana had 29,383 housing units. The number of housing units increased 180% between 1990 and 2015. The vast majority of Fontana's housing units are single family homes, while 15% of housing units are in multi-unit structures.

EXHIBIT 12: **HOUSING UNITS**

Housing Unit Type	*Number*	*Percent of total*
Single detached	42,372	80%
Single attached	1,231	2%
Two to four	2,122	4%
Five plus	5,704	11%
Mobile homes	1,540	3%
Total	**52,969**	**100%**

Source: California Department of Finance, E-5 City/County Population and Housing Estimates, 2015

EXHIBIT 13: **AGE OF HOUSING**

Year built	*Number of units*	*Percent of total*
2000 or later	13,073	25.8%
1990-1999	8,410	16.6%
1980-1989	13,410	26.4%
1970-1979	5,602	11%
1960-1969	3,128	6.2%
1950-1959	4,540	9.0%
1949 or earlier	2,553	5.1%
Total	**52,969**	**100%**

Source: U.S. Census, ACS 2009-2013

Housing tenure

Sixty-eight percent of Fontana households are homeowners, according to U.S. Census Bureau estimates (ACS 2009-2013). The remaining 32% are renters, at least half of whom live in single-family homes. The 2007-2011 ACS reported that the majority of owner-occupied housing was single-family detached units, accounting for 93.9% of the total owner-occupied housing units. Renter-occupied units were mostly in single-family detached units (47 percent) or multi-family complexes with 5 or more units (34.9 percent). The City of Fontana has a higher owner occupancy rate than the statewide average of 53.6%. The higher owner occupancy rate in Fontana may be attributable to greater home affordability in the Inland Empire compared to the statewide average.

Age of housing stock

Most of the housing in Fontana is relatively new, with a quarter of units built since 2000. Approximately 69% of Fontana's housing stock was built between 1980 and 2013. The two major waves of housing construction were in the 1980s and the 2000-2006 period. In contrast, about 5% of the city's housing stock dates from the period before incorporation of the city. Depending on the quality of original materials and construction, older housing may need more regular maintenance and repair than newer housing. However, the age of housing does not in itself indicate the quality of the housing stock, since newer construction may be of variable quality.

Housing costs

Housing in the Inland Empire is less expensive than in any other region of California. The California Association of Realtors (CAR) calculates an "affordability index" every quarter for regions and counties in California. This is the percentage of households that can purchase the median-priced home based on traditional assumptions of a 20% down payment, average fixed-mortgage interest rates, and monthly payments of no more than 30% of income. CAR determined that in the 3rd quarter of 2015, the Inland Empire sub-region had an affordability index of 45%, and San Bernardino County had a 54% affordability index. These indices are higher than the state (29%) and Los Angeles County (24%) for the same period. The Inland Empire as a whole also enjoys a higher affordability rate than Riverside County alone, which had a 39% affordability rate for the same period.

CAR also calculates an affordability index for first-time home buyers—the percentage who can purchase a median-priced home assuming a 10% down payment, an adjustable mortgage rate, and a monthly payment of no more than 40% of monthly income. The Inland Empire in the third quarter of 2015 had a first-time home buyer affordability index of 65%.[12] Access to homeownership is more difficult since the recession because of more stringent underwriting standards. Even if a buyer can afford monthly payments from monthly income, a good credit score and at least a 10% down payment is necessary to get a mortgage.

While the region is more affordable than other parts of California, in Fontana a significant proportion of both owner-occupants and renters

[12] *www.car.org/marketdata/data/haitraditional/; http://www.car.org/marketdata/data/ftbhai/*

pay more than 30% of their income for housing costs—a condition known as "cost burden." Over half the total households are cost-burdened: 46% of owners and 64% of renters.

EXHIBIT 14: **HOUSING COST BURDEN IN FONTANA**

Jurisdiction	*Total Households*	*Cost-Burdened Households*	*% of Cost-Burdened Households*
Fontana	48,141	24,833	51.6%
San Bernardino County	603,879	279,106	46.2%
California	12,542,460	5,755,554	45.9%
United States	115,610,224	41,002,236	35.5%

Source: US Census Bureau, American Community Survey. 2009-13.

Fontana experienced the housing bubble of the early 2000s, and the median price of a single-family house rose to a high of about $425,000 in 2006. Like the rest of the Inland Empire, Fontana's housing market crashed during the Great Recession and many homeowners were "underwater" (the market value of their houses were less than they paid for them) or went through foreclosure.

As late as November 2014, Fontana had one of the highest rates of housing units in foreclosure in the Inland Empire. However, by July 31, 2015, 14.5% of homeowners in Fontana had negative equity, in line with the US average of 15.4%. Also, 7.8% of Fontana homeowners are delinquent on their mortgage payments, compared to a 6% US average.

However, housing prices are rising again, with a median home price of approximately $326,000 at the end of 2015. According to the Trulia.com real estate website, sale prices have appreciated 57.6% over the last 5 years in Fontana.[13] Housing values are predicted to increase in 2016. The real estate website Zillow.com forecasts that median housing prices in Fontana will reach approximately $377,000 by November 2016, ten years after the peak price of $425,000 in 2006.[14]

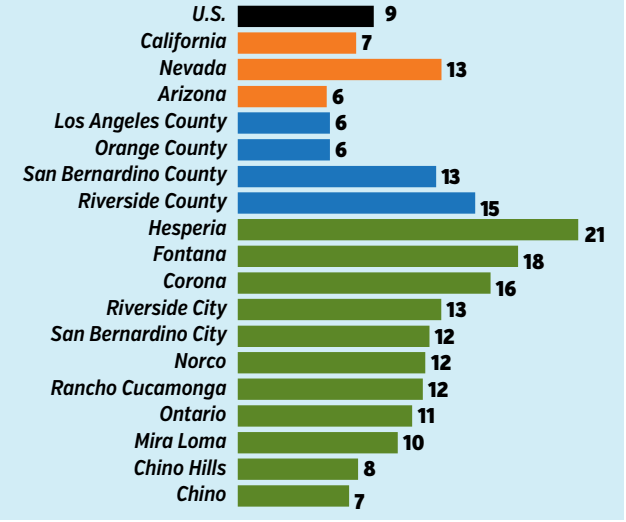
While home construction is returning to Fontana, permits have not rebounded to pre-recession levels. Housing permits peaked in 2005, when the City issued 1,851 building permits. From 1998 to 2006, the city issued no fewer than 1,001 single-family permits annually. Housing permits fell from the 2005 peak of 1,851 to a low of 103 permits in 2010. Fontana had 13 active communities selling new homes in the fourth quarter of 2014. Each development was selling at an average pace of 2.4 homes per month. At the peak of the market, Fontana had 24 active communities, each selling at a pace of approximately five homes per month.

State-approved Housing Element

As noted earlier, the Housing Element of a general plan is the only general plan element that requires review and certification by the State of California, which has identified attainment of a decent home and living environment for every resident as the State's primary housing goal. In practice, this means that the Housing Element is organized

[13] www.trulia.com/real_estate/Fontana-California/market-trends/
[14] www.zillow.com/fontana-ca/home-values/

EXHIBIT 15 **FORECLOSURE RATES–FORECLOSURES PER 10,000 ELIGIBLE PROPERTIES, NOVEMBER 2014**



Source: Joel Kotkin et al. "Housing the Future: The Inland Empire as Southern California's Indispensable Geography" (2015 Symposium on the Affordability of Housing, Inland Valleys Association of Realtors, February 4, 2015.)

according to state requirements and focuses primarily on providing housing affordable to low- and moderate-income households. The State requires that municipalities update the housing element of their general plans every ten years. SCAG is responsible for allocating the region's projected new housing demand in Fontana and other jurisdictions, a process known as the Regional Housing Needs Assessment (RHNA). This process identifies Fontana's "regional share" for new housing construction and is intended to avoid over-concentration of low-income households in any one jurisdiction. The allocation is divided into four income categories:

- very-low-income: up to 50% of median income;
- low-income: 51% to 80% of median income;
- moderate-income: 81% to 120% of median income; and
- above-moderate-income: more than 120% of median income.

EXHIBIT 16. **MEDIAN SALES PRICE REPORTED BY TRULIA.COM FOR ALL HOUSING IN FONTANA, 2000–2015**

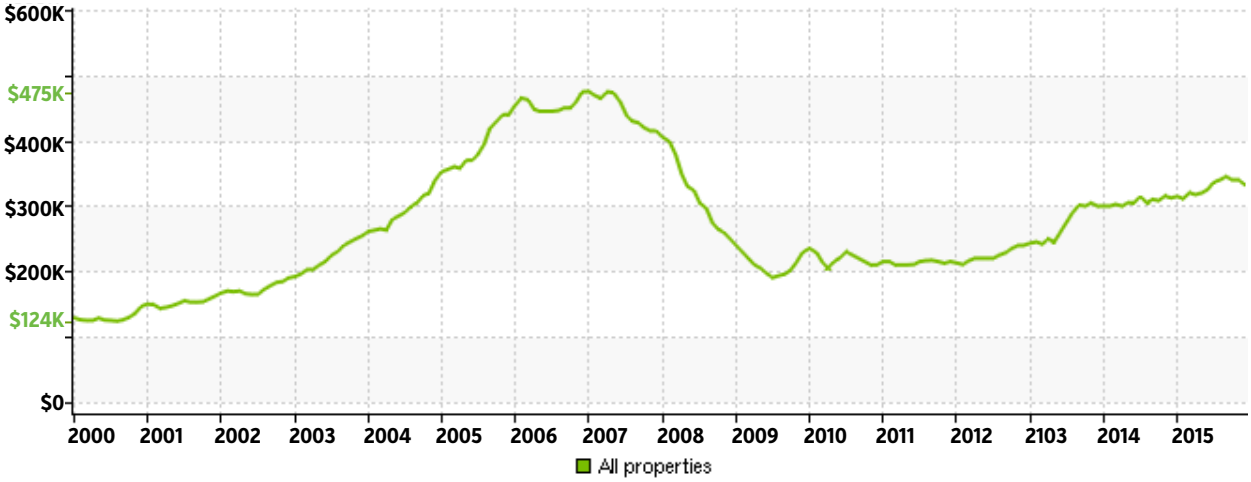
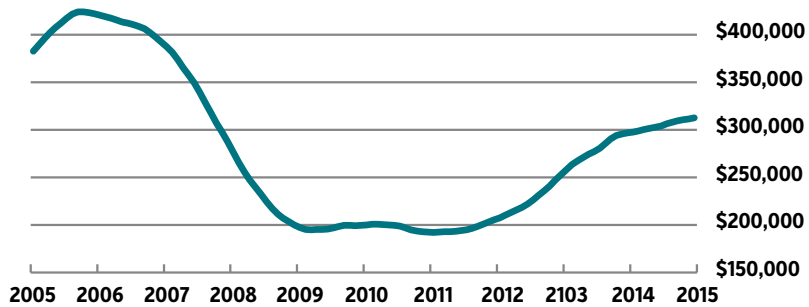
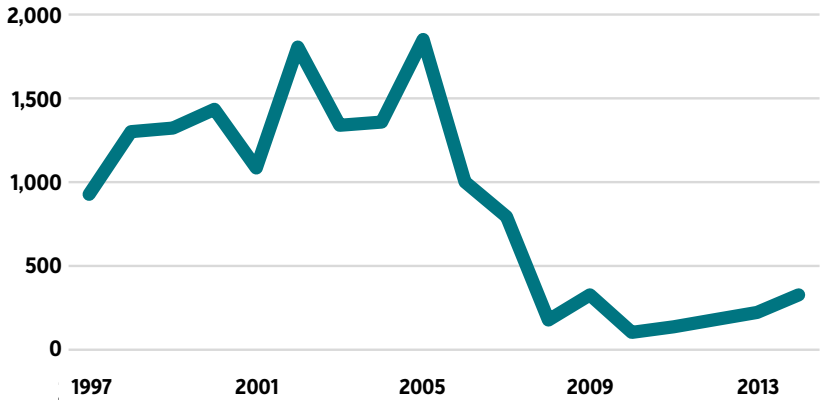


EXHIBIT 17 **MEDIAN HOUSING VALUES, 2006-2015**



Through August 31, 2015. Source: Zillow.com Home Prices Index

EXHIBIT 18 **FONTANA RESIDENTIAL BUILDING PERMITS, 1997-2014**



Permits for single-family houses built in Fontana. Source: Construction industry Research Board

In addition, cities also have to address housing growth needs for very-low-income households (30% or below median income), which state law defines as half of the very-low-income group. The RHNA requires that communities plan to provide for these housing units through appropriate zoning and other efforts. However, construction of affordable units depends on market conditions and availability of subsidies. There are no consequences if the units are not built.

Through the certified Housing Elements for 2006-2014 and the 2014-2021, the City of Fontana has to make up the shortfall of 4,282 units in producing very-low- and low-income-housing by 2014, as well as producing the 5,977 total units by 2021, which includes 3,137 units for extremely-low-income, very-low-income, and low-income households. Some of the shortfall from the 2006-2014 housing need has been met through construction of 309 assisted units of family and senior housing. However, because of the recession and drastic decline in housing starts between 2006 and today, few housing units of any kind have been built over the last ten years.

Housing need performance shortfall in the 2006-2014 Housing Element

Fontana's 2006-2014 RHNA identified a need of 5,699 housing units and the City's Housing Element was certified. The city met the need for moderate and above-moderate-income housing but did not meet the need of very-low and low-income housing, 2,461 and 1,821 units respectively, for a total shortfall of 4,282 units. The certified Housing Element included a rezoning program, which was not completed.

Because of the rezoning program and because the City had underutilized land that could meet the need, the City was required by state law to re-zone land to accommodate the need according to several criteria:

- Sites must be rezoned to accommodate 100 percent of the RHNA shortfall for very-low and low-income units;
- Rezoned sites must accommodate owner-occupied and multi-family residential uses by-right; and

- At least 50% percent of the very-low and low-income housing need must be accommodated on sites designated for residential use and for which nonresidential use or mixed uses are not permitted.

In order to resolve this shortfall from the previous RHNA and Housing Element, the City had to rezone a minimum of 107.05 acres. The City created an R-5 zoning district allowing 50 units per acre and established the zone on locations on Foothill Boulevard (close to expected Bus Rapid Transit stops), Sierra Avenue, and in the Westgate Specific Plan. The City also created an R-4 zoning district allowing 25-39 units per acre that were assumed to accommodate moderate- and above-moderate-income units on 18.8 acres at Cypress and Valencia avenues, within walking distance of the Metrolink station.

2014-2021 Housing Need

The RHNA prepared by SCAG projects need for 2014-2021 as 5,977 new housing units. Fifty-two percent of this total comprises housing need for extremely low-income, very low-income, and low-income households.

The state-approved 2014-2021 Housing Element is organized into four policy strategy areas:

Strategy 1—Production of Housing establishes policy actions for the future production of a range of rental and for-sale housing units in the city.

- Provision of adequate sites to meet RHNA goals (establishment of R-4 and R-5 zoning districts completed);
- Expansion of affordable housing opportunities through new construction to create an average of 10 units annually;
- Annual monitoring of housing production;
- Compliance with the State Density Bonus Law that provides by-right development of second units on existing single-family properties, by updating the current ordinance to comply with new state requirements with a goal of 5 new second dwelling units annually;
- Optional density standards review to ensure that the policy provides for an additional means to provide housing opportunities for extremely low-income to moderate-income households;
- Monitor implementation of the Inclusionary Housing Ordinance adopted in 2012 which requires new construction to pay a fee designated for affordable housing;
- A program to educate the public and developers on the advantages of manufactured and modular housing;
- Facilitation of acquisition, rehabilitation, and management of large-scale multi-family projects by private developers (typically nonprofits);
- An infill housing program to develop quality housing units on infill sites through reduction of development fees in the core area of the city and other incentives, with a goal of 2 infill units annually;
- Monitoring of development fees to ensure that they are not an undue constraint on affordable housing development;
- Encouragement of development of rental and for sale housing for larger families with a goal of 5 family units annually "based on developer interest;"
- Encourage the development of senior housing through incentives, with a goal of 10 senior units annually "based on developer interest;"

- Incentives and regulatory concessions to promote a variety of housing options through mixed-income development and to avoid concentration of affordable development;
- Expedited permit processing for low- and moderate-income housing and senior housing.

Strategy 2—Conservation and Preservation of Existing Housing establishes policy actions to conserve the existing housing stock and preserve housing opportunities for Fontana's residents. There are 418 "assisted" units (with government rental or mortgage subsidies) in Fontana that are at risk during 2013-2023 of converting to market rate units.

- Monitoring of at-risk units;
- Establishment of partnerships with non-profit housing developers;
- An affordability-preservation strategy;
- Pre-emptive code enforcement; acquisition and rehabilitation of existing multifamily housing (dependent on the availability of federal home funds);
- A program to revitalize neighborhoods bounded by Arrow Highway, San Bernardino Avenue, Citrus Avenue and Juniper Avenue through acquisition, substantial rehabilitation, and professional management of selected multifamily buildings by the housing authority.

EXHIBIT 19: **FAIR SHARE HOUSING NEEDS ALLOCATION, 2014-2021**

EXTREMELY LOW INCOME*	VERY LOW INCOME	LOW INCOME	MODERATE INCOME	ABOVE-MODERATE-INCOME	TOTAL CONSTRUCTION NEED
721	1,442	974	1,090	2,471	5,977

** Regional share of extremely low-income units assumed 50% of the very low-income units*

Source: Regional Housing Needs Asssment, Southern California Association of Governments, 2012

EXHIBIT 20: **QUANTIFIED OBJECTIVES FOR HOUSING NEEDS, 2014-2021**

PROGRAM/INCOME LEVEL	QUANTIFIED OBJECTIVE (DWELLING UNITS OR HOUSEHOLDS)
NEW CONSTRUCTION	
Extremely low-income (subset of very low-income objective)	721
Very low-income	1,442
Low-income	974
Moderate-income	1,090
Above moderate-income	2,471
Total	**6,698**
REHABILITATION	
Extremely low-income (subset of very low-income objective)	50
Very low-income	50
Low-income	100
Moderate-income	27
Above moderate-income	13
Total	**240**
PRESERVATION/CONSERVATION	
Extremely low-income (subset of very low-income objective)	0
Very low-income	55
Low-income	286
Moderate-income	77
Above moderate-income	0
Total	**418**

Source: City of Fontana

Strategy 3—Design and Quality of Housing and Neighborhoods establishes policy actions for providing high-quality, environmentally responsible, well designed living environments for Fontana's residents.

- Promotion of water-conservation practices, such as the use of low water-demand fixtures and drought-tolerant landscaping and materials;
- Promotion of green/sustainable development practices by continuing the Green Fontana rebate program and evaluating the potential for other incentives, such as streamlined permitting.

Strategy 4—Accessibility to Affordable Housing establishes policy actions to enhance opportunities for affordable housing for all segments of Fontana's population.

- Adoption of reasonable accommodation procedures related to code regulations and permitting procedures for persons with disabilities;
- Compliance with Senate Bill 2 to allow for emergency shelters, transitional housing and supportive housing to homeless individuals and families by amending zoning and the municipal code and enforcing the provisions of the housing accountability act;
- Encouraging the development of mixed-income housing developments, with a goal of 20 units annually within mixed-income developments;
- Participation in and support for regional fair housing through Fontana's contract with the Inland Fair Housing and Mediation Board and continued provision of fair housing information;
- Referrals to the family Self-Sufficiency Program administered by the San Bernardino County Housing Authority for housing choice voucher (Section 8) participants;
- Referrals to the County Department of Mental Health program for mentally ill homeless adults; referrals to the county transitional-housing and case-management programs for homeless families and individuals with a goal of rehabilitation of one housing unit and assistance to up to 200 persons with transitional housing annually;
- Support for the Fontana domestic violence facility and programs in the existing 10-unit program, with the goal of assisting 20 homeless victims of domestic violence each year;
- Referrals of homeless persons to the County's community assistance program;
- Support for the City's housing authority antipoverty programs;
- Referrals to the County housing authority for Housing Choice Voucher (Section 8) programs;
- Provision of housing opportunities for extremely-low-income households by coordinating with the county and social service agencies;
- Facilitating housing provision through incentives;
- Coordinate with nonprofit developers and others to establish best practices;
- Review and amend the zoning code to comply with California Code sections related to employee housing (related to agriculture); and
- Identify the housing needs of persons with developmental disabilities.

C. Land Use

"Land use" is an umbrella term for the activities that actually occur on a given parcel of land, such as residential, retail, industrial, agricultural, or transportation uses. Land uses can change over time—for example, when a farm becomes fallow land and then is turned into a residential subdivision. Zoning is the tool that a local government uses to regulate the uses of the land, but land use and zoning are not identical. Vacant land can be zoned for a use that has not yet been developed; uses can be "grandfathered" or "nonconforming" (meaning that they existed before the land was zoned for a different use); and zoning categories can permit more than one use—for example, an area zoned for industrial uses may also permit commercial uses, which may come to predominate in the area.

☞ *Findings*

- **Residential land uses account for nearly 50% of the occupied/used (not vacant) land in Fontana. Since much of the vacant land has been entitled for residential development, the majority of land is expected to be in residential use in the future.**
- **Foothill Boulevard, Sierra Avenue, Valley Boulevard, and SR-210 are the primary commercial corridors of the city.**
- **The heaviest industrial land uses are concentrated in the southwest, including areas within Fontana's Sphere of Influence.**
- **Fontana has 27 specific plans, of which 17 are fully developed, 5 are partially developed, and 5 are undeveloped.**

The City of Fontana encompasses approximately 37 square miles of incorporated area, with an additional fifteen square miles in the City's Sphere of Influence (SOI). The majority of the SOI is located in the unincorporated "island" west of the city limits. Also located within the SOI is an area north of I-15 to the national forest boundary and pockets of land adjacent to the eastern city limits.

The highest concentration of development is within the central "City Core" area, which includes single- and multi-family dwelling units and numerous businesses located along Sierra Avenue, the main north-south corridor in the city. Industrial development is located primarily along I-10 in the southern portion of the city and in the western SOI. This area also contains the California Speedway and over 5,000 predominantly single-family residences. The most northern edge of the city and the northern SOI are largely undeveloped, with some agricultural uses and scattered residential development.

Residential

The majority of land that is occupied or used in Fontana is residential, and the vast majority of residential land is in the form of single-family homes. Multifamily development is predominantly located between Foothill Boulevard and I-10, and especially clustered in the older part of the city, in a rectangle formed by Sierra Avenue to the east, Arrow Boulevard to the north, Citrus to the west, and San Bernardino Avenue to the south.

EXHIBIT 21 **FONTANA LAND USES**

Land Use in Fontana	*Area (acres)*	*Percent*
Residential	9,022	32.71%
Vacant (including entitled land)	8,500	30.81%
Right of Way	5,130	18.60%
Industrial	2,563	9.29%
Commercial and Office	1,347	4.88%
Agriculture	332	1.21%
Institutional	233	0.84%
Recreation	199	0.72%
Open Space	154	0.56%
Government	49	0.18%
Utility	47	0.17%
Mixed Use	8	0.03%
Total	**27,584**	**100.00%**

Source: Calculations based on GIS data

Commercial (Including Office)

Fontana has three predominant commercial area types: strip retail, neighborhood centers on arterial corridors, and stand-alone chain retail. They are located mostly along Foothill Boulevard and Valley Boulevard, and along Sierra Avenue, with large neighborhood centers and power centers off major roads and freeways. There is a limited amount of main-street-style mixed-use commercial area within a walkable urban grid in the heart of downtown on Sierra Avenue. Fontana also has a significant amount of auto-oriented commercial uses, including sales and repairs, especially along Valley Boulevard. The Fontana Auto Center along I-210 is designated for dealerships. Office uses account for about 12% of commercial uses. Small- and medium-scale office buildings are scattered between Foothill Boulevard and Jurupa Avenue, with a small amount of office use in or adjacent to the large retail centers off SR-210.

Industrial

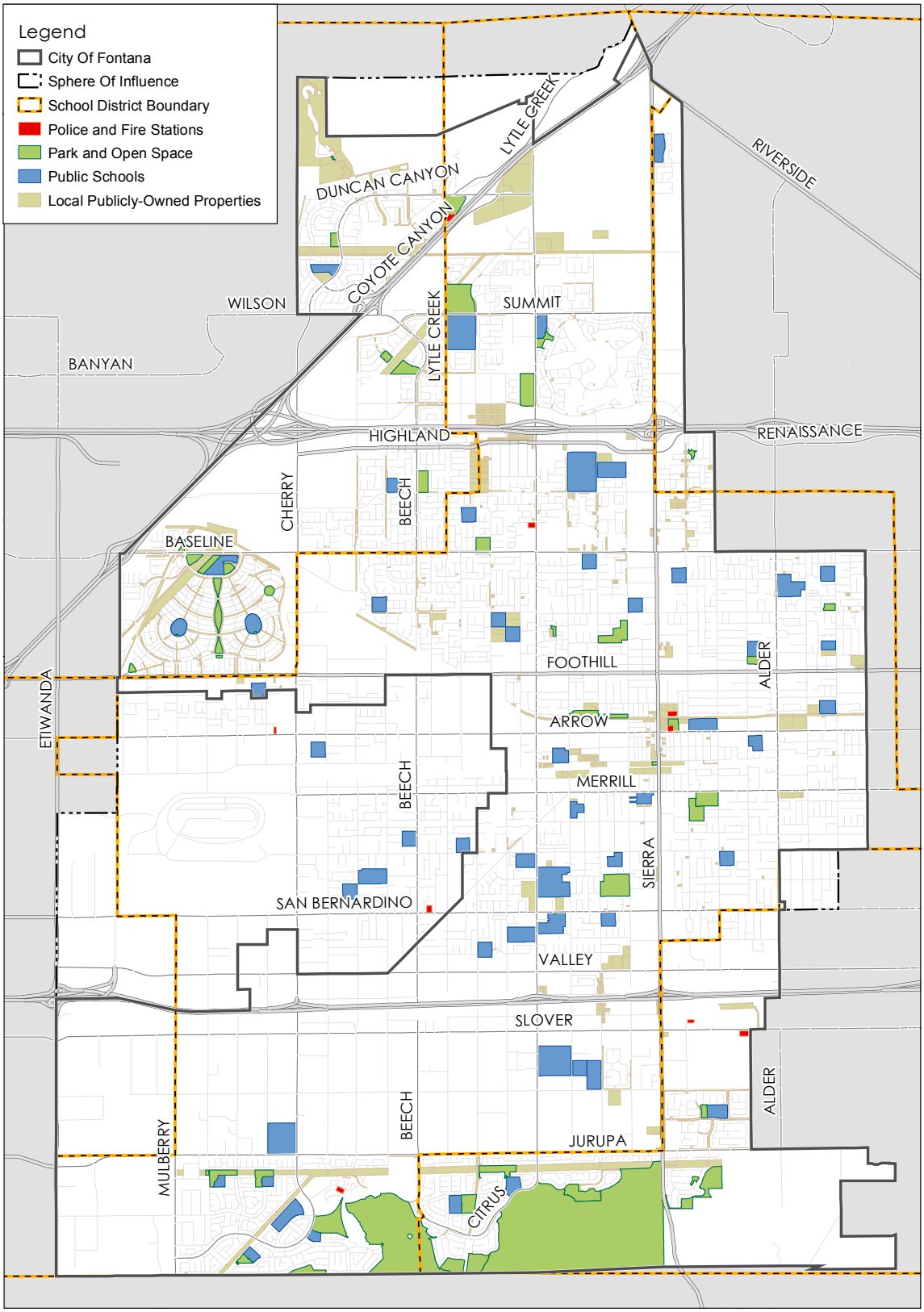
Fontana's industrial land uses in 2015 are almost entirely light industry, often linked to the logistics and warehousing industries. Within the city limits, most industry is located south of I-10 to Jurupa Avenue, and along Cherry Avenue between Baseline Avenue and Foothill Boulevard, where a large Target distribution center is located. Fontana's industrial real estate market remains strong and has a lower-than-average industrial vacancy rate than other cities in the Inland Empire West industrial submarket. Because of the robust industrial market, one area approved for residential development has become an industrial project, the West Valley Logistics Center in South Fontana. Outside the city limits, industrial land uses can be found between Arrow Route and I-10.

Institutional and Public Uses

Public and non-profit institutions are distributed throughout Fontana, with schools, police and fire stations, and community centers in neighborhoods. Fontana has one major hospital, Kaiser Permanente, and several smaller health centers. Post-secondary educational institutions in Fontana are Chaffey College, a branch of the community college whose main campus is in Rancho Cucamonga, and Westech College, which provides training in health-related careers. The Civic Campus around City Hall, completed since the 2003 General Plan, is a central institutional focus point for downtown, including the Lewis Library and Technology Center, which opened in 2008.

Vacant land

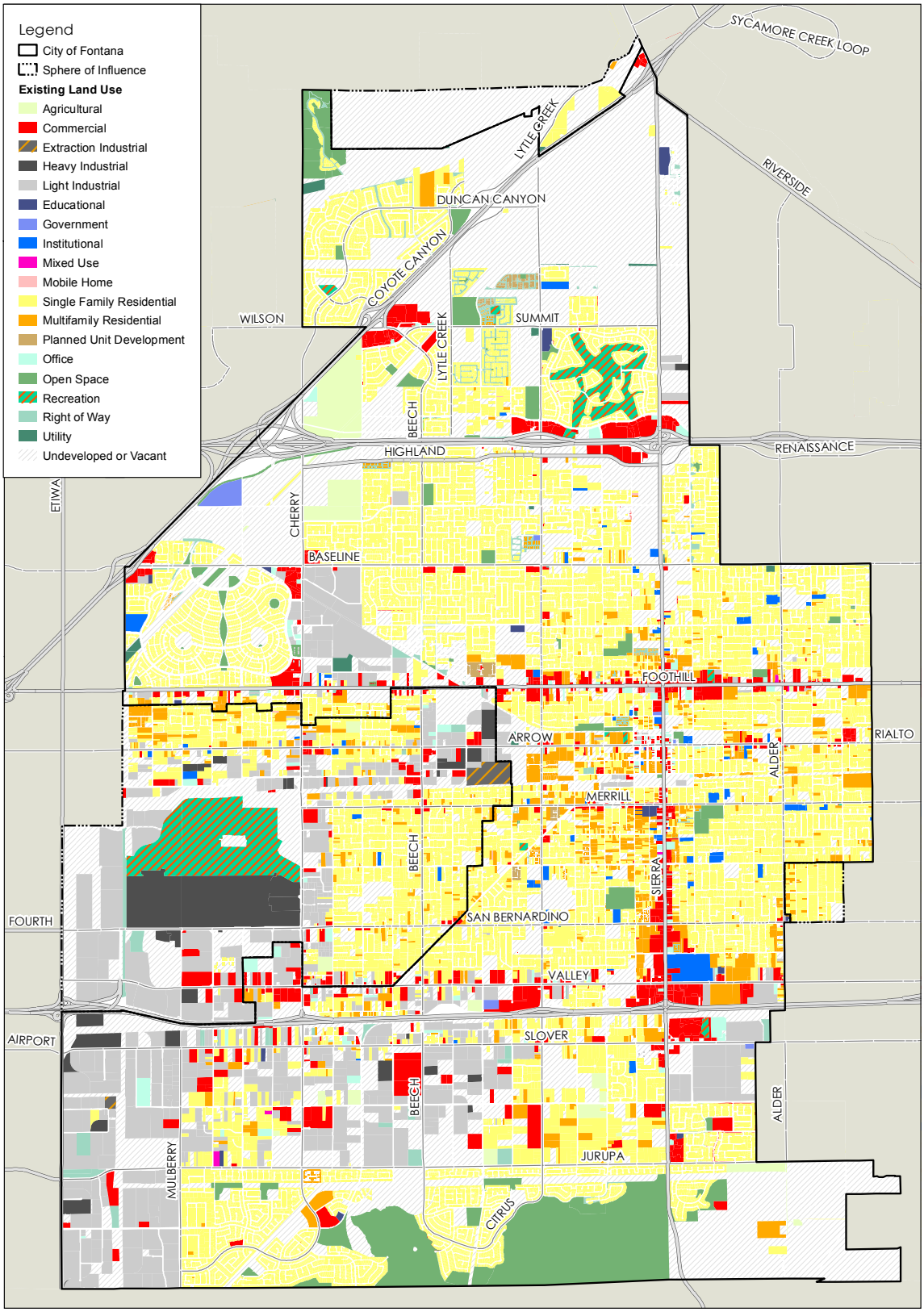
Compared to Fontana's more built-out neighbors, Ontario and Rancho Cucamonga, Fontana still has a relative abundance of vacant land. However, most major unbuilt sites were entitled for development before the housing crash and many are moving toward development in the short term. Fontana has 27 specific plans that are in various stages of entitlement (see the section on specific plans on page 46). Vacant land for infill opportunities is available, particularly throughout the core area.



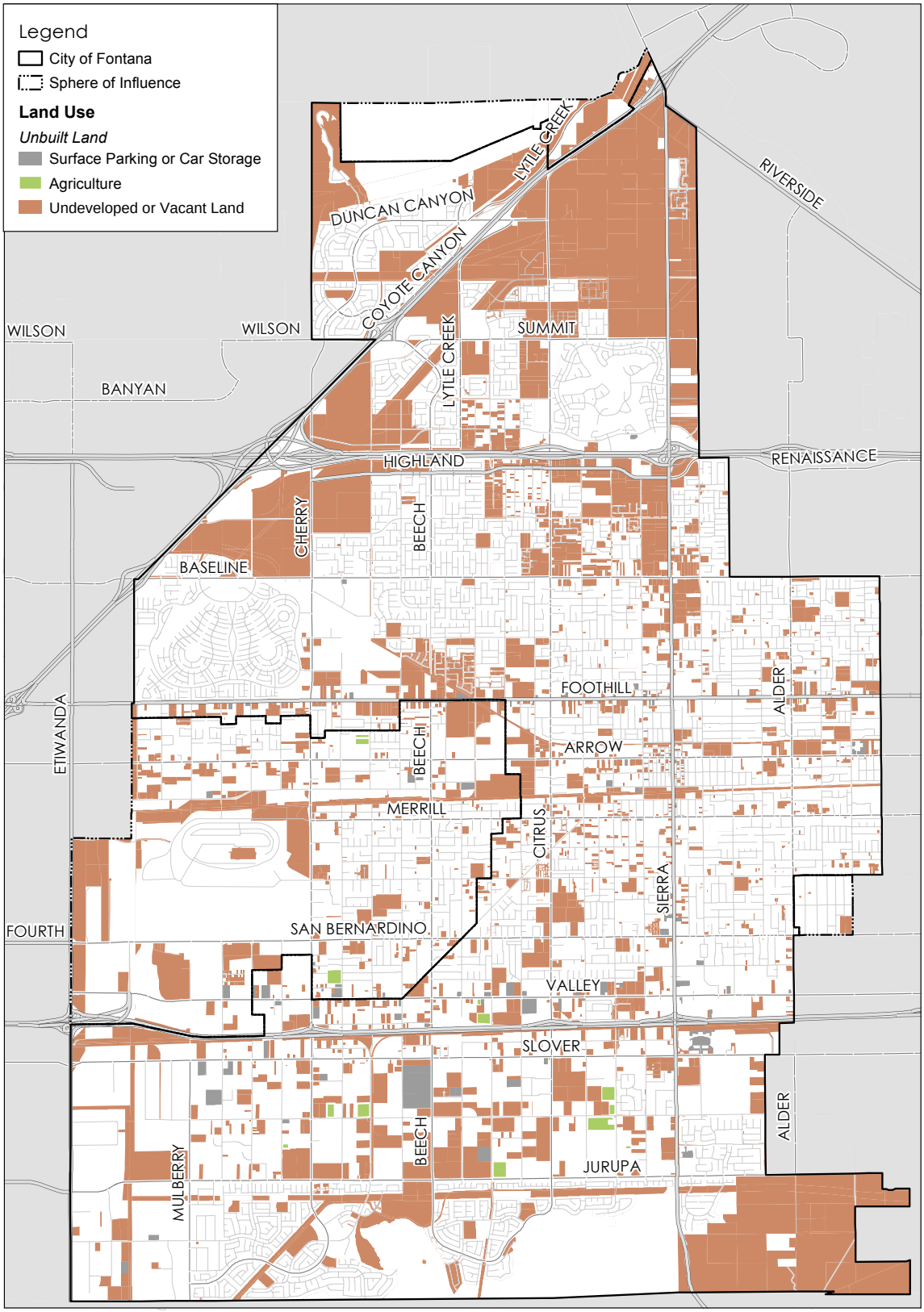
Publicly Owned Land
October 2015
Data source: City of Fontana, 2015

Fontana Forward

0 2,500 5,000 10,000
Scale 1:75,000 Feet



Existing Land Use
October 2015
Data source: San Bernardino County, 2015



Unbuilt Land
October 2015
Data source: City of Fontana, San Bernardino County, 2015

Fontana Forward

0 2,500 5,000 10,000
Scale 1:75,000 Feet

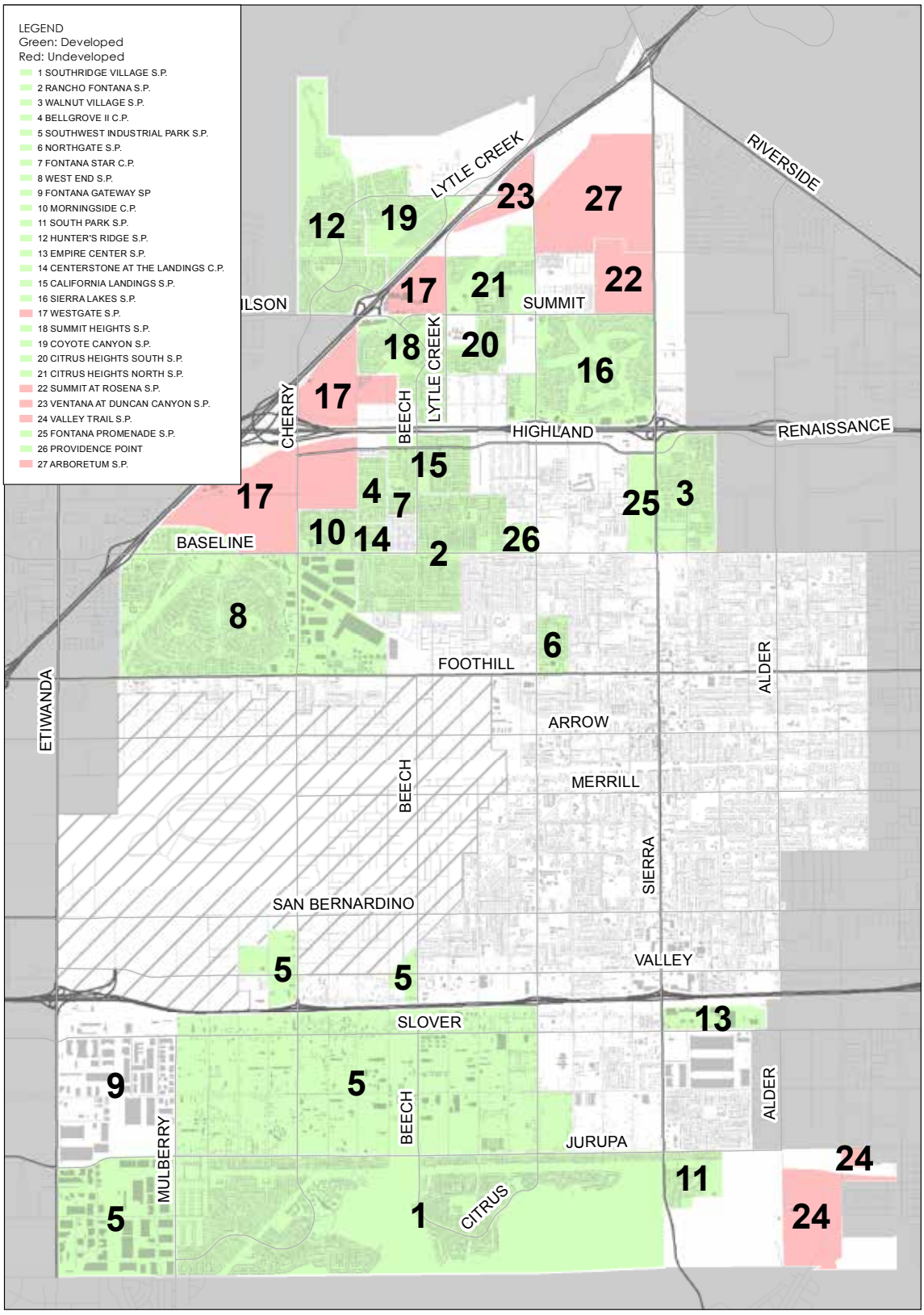
D. Specific Plans

Specific plans allow for flexibility in design and customized development standards tailored to specific needs and conditions. As described by the California Government Code, a specific plan must be consistent with the general plan and must respond to all of the required general plan topics to the extent that they apply to the area in question. Of Fontana's 27 specific plans, 16 are fully developed, 5 are partially developed, and 6 are yet to be developed. Under current approved specific plans for these 6, a maximum of 8,257 housing units could be built in the future. Specific plans that are fully developed and built out, and whose developer agreements are no longer in force, may be suitable for sunsetting. These specific plans, which appear on the zoning map, would then be replaced with general zoning appropriate to the existing development and become subject to citywide development standards, as long as those standards are equal to or superior to the older specific plan standards.

EXHIBIT 22 **SPECIFIC PLAN STATUS**

NAME & NUMBER *	STATUS	OVERALL ACREAGE	MAXIMUM RESIDENTIAL UNITS
1 Southridge Village S.P.	Developed	2,657.0	8,800
2 Rancho Fontana S.P.	Developed	510.0	2,392
3 Walnut Village S.P.	80% Developed	342.0	1,644
4 Bellgrove II C.P.	Developed	90.0	248
5 Southwest Industrial Park S.P.	Developed	3,281.0	180
6 Northgate S.P.	Developed	86.6	165
7 Fontana Star C.P.	Developed	30.1	111
8 West End S.P.	Developed	1,478.0	3,268
9 Fontana Gateway S.P.	90% Developed	776.0	—
10 Morningside C.P.	Developed	120.0	440
11 South Park S.P.	Developed	118.0	366
12 Hunter's Ridge S.P.	Developed	567.6	1,936
13 Empire Center S.P.	Developed	117.9	—
14 Centerstone At The Landings C.P.	Developed	40.0	149
15 California Landings S.P.	Developed	223.2	791
16 Sierra Lakes S.P.	Developed	700.0	2,035
17 Westgate S.P.	Undeveloped	954.0	2,377
18 Summit Heights S.P.	Developed	316.0	1,051
19 Coyote Canyon S.P.	Developed	283.3	—
20 Citrus Heights S.P.	Developed	109.5	495
21 Citrus Heights North S.P.	In progress	206.9	1,161
22 Summit at Rosena S.P.	Undeveloped	185.5	856
23 Ventana at Duncan Canyon S.P.	Undeveloped	99.0	334
24 Valley Trails S.P.	Undeveloped	291.0	1,154
25 Fontana Promenade S.P.	50% of area under construction	119.0	801
26 Providence Pointe S.P.	75% developed	34.0	205
27 Arboretum S.P.	Undeveloped	487.0	3,526

** Numbers correspond to the numbers on the "Specific Plans" map on the facing page.*



Specific Plans
October 2015
Data source: City of Fontana, Esri, 2015

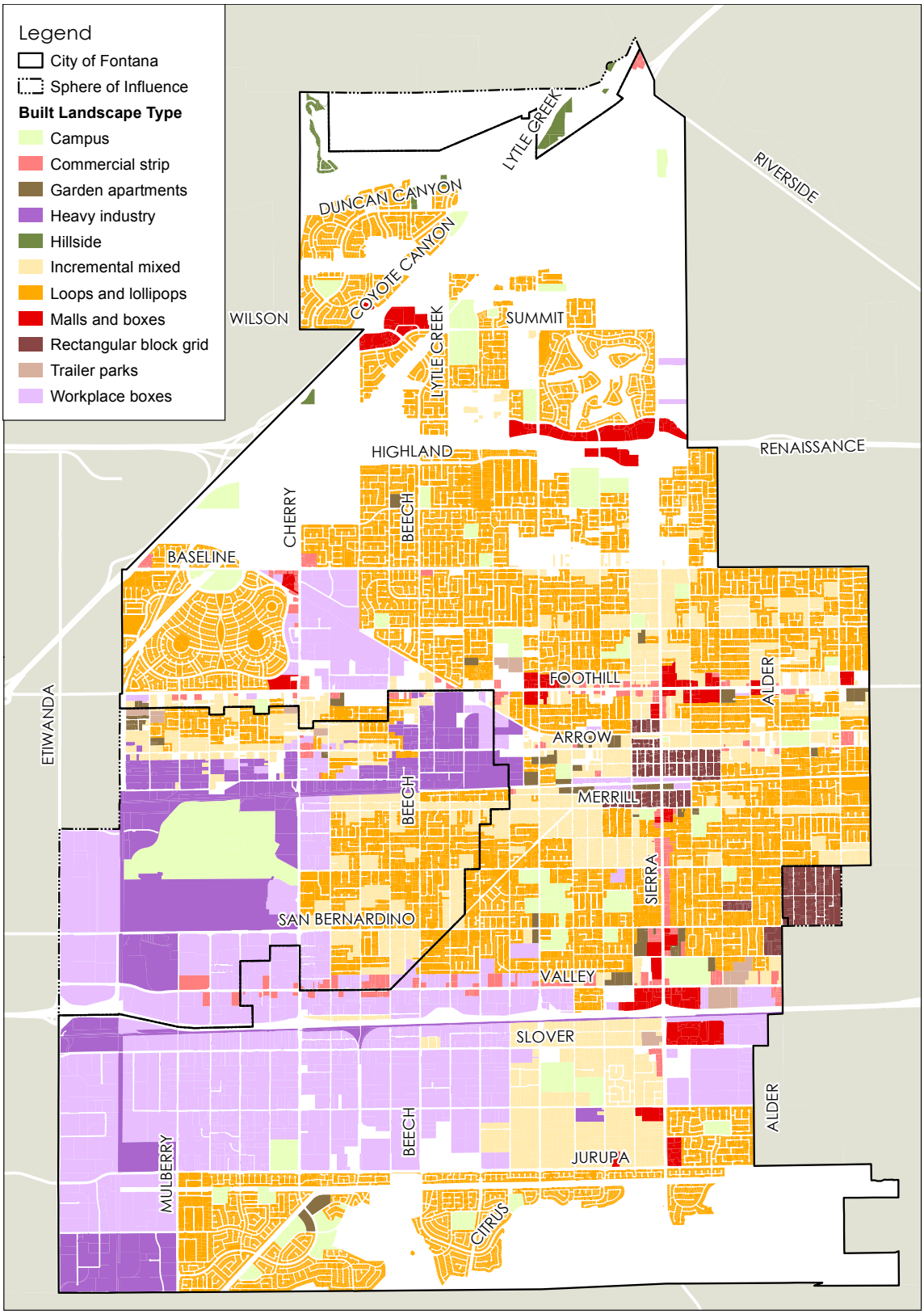
E. Development Patterns And Character

Development patterns are independent of land use and shape the character of different parts of the city. These development patterns reflect the prevailing models during the time of their construction. For example, a single-family residential neighborhood in the downtown's older modified rectangular block grid has a different feeling than the same land use in a suburban-style development with curving streets and cul-de-sacs. These differing models of development also have implications for connectivity.

Professor Stephen M. Wheeler of UC Davis has developed a set of development typologies that can be applied to any city in the world. Exhibit 23 identifies which of these types of development—defined by the layout of streets, buildings and space between—are present in Fontana. The Development Typologies map shows where they occur.

EXHIBIT 23 **DEVELOPMENT TYPES**

TYPE	*DESCRIPTION*	*FONTANA EXAMPLE*
RESIDENTIAL AND MIXED-USE		
Hillside	Irregular winding streets shaped by steep terrain. Often an upper-class residential retreat from the city.	Foxborough Drive
Incremental mixed	Small-scale land subdivision and development within an existing large-scale road system, resulting in a non-uniform mix of forms.	Most of Areas 2 and 3
Loops and lollipops	Large-scale, mass-produced residential landscapes with regular, curvilinear streets and cul-de-sacs.	West End
Trailer parks	A dense enclave of mobile homes on small lots with narrow access roads. Often screened from surrounding landscapes.	Capri Mobile Estates
Rectangular block grid	A rectangular-block grid form with small squarish blocks with varied land use and high street connectivity.	Valencia Avenue and Sierra Avenue area
COMMERCIAL AND INSTITUTIONAL		
Civic	Urban landscape dominated by large civic buildings and spaces.	Civic campus downtown
Campus	Large institutional sites often with formal or picturesque design of spaces. Can include universities, corporate campuses, office parks, palaces, prisons, fairgrounds, and military bases.	Kaiser Permanente
Commercial strip	Low-density linear commercial development along highly trafficked streets. Building footprints small.	Foothill Boulevard
Malls and boxes	Large commercial buildings or a single large enclosed pavilion, usually with ample parking.	Palm Court Empire Center
WORKPLACES AND INDUSTRIAL		
Heavy industry	Industrial uses on large parcels. Often includes large-footprint buildings, specialized equipment, outdoor storage of materials, fuel tanks, and rail access.	California Steel Industries sites in the Sphere of Influence
Workplace boxes	Landscapes of boxy buildings serving industrial or commercial uses. Office park subtype has extensive, landscaped parking. Warehousing/distribution subtype features prominent loading docks and is near major roads.	Distribution centers

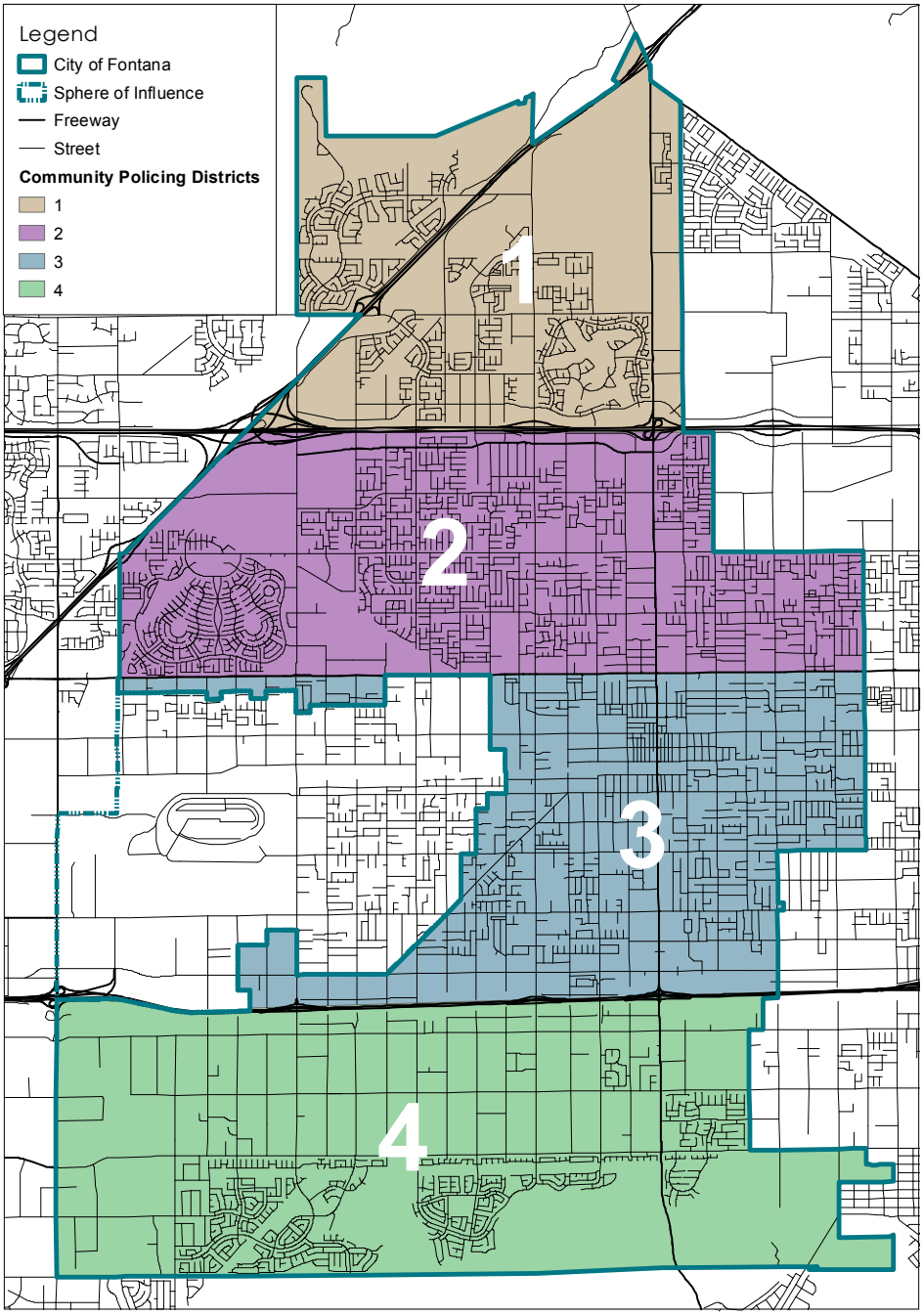


Development Typologies
October 2015
Data source: San Bernardino County, 2015. Stephen M. Wheeler [2015], "Built Landscapes of Metropolitan Regions: An International Typology, Journal of the American Planning Association.

F. Community Areas/Planning Districts

The police department community policing program divides Fontana into four areas, which are used in the general plan update process as planning districts and community outreach zones.

- **Area 1** (all areas north of the 210 freeway) is characterized by inward-focused planned communities and otherwise vacant and fallow land. To the north, the topography becomes hilly and transitions into open space with sparse estates. This area has the newest development and the highest median income and adult educational attainment in the city.
- **Area 2** (area from the 210 freeway south to Foothill) has a mix of the planned communities found in Area 1 and the more traditional street grid of downtown found in Area 3. There are few vacant parcels in this area.
- **Area 3** (area between Foothill and the 10 freeway) has a rectilinear street grid pattern that contains the downtown core, the civic campus, and some industrial uses to the west near the Sphere of Influence. Area 3 has neighborhoods with the highest residential density in the city. As the oldest part of the city, with the most multifamily housing, Area 3 has the lowest median income and adult educational achievement levels.
- **Area 4** (all areas south of the 10 freeway) contains remnants of Fontana's agricultural past, a significant industrial sector, and planned communities on the edge of the Jurupa Hills.



Community Policing Districts
September 2015
Data source: City of Fontana, Esri 2015

DISTRICT 1



POPULATION CHARACTERISTICS

	DISTRICT 1	FONTANA
Total population	22,552*	204,950**
Total households	5,662*	48,130**
Total housing units	6,108*	51,857**

DEMOGRAPHIC CHARACTERISTICS

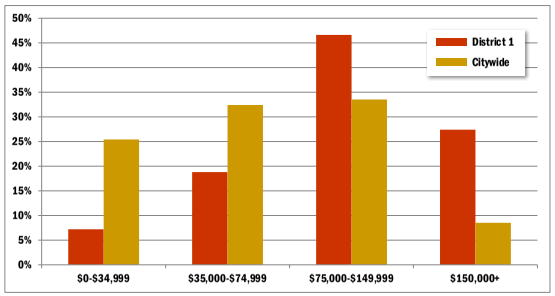
	DISTRICT 1	FONTANA
White	49%	47%
Black	15%	10%
American Indian	1%	1%
Asian	15%	6%
Pacific Islander	0%	0.3%
Some other race	15%	30%
Population reporting two or more races	5%	5%
Total Hispanic population, any race	40%	67%

HOUSEHOLD CHARACTERISTICS

	DISTRICT 1	FONTANA
Average household size	3.8	4.1**
% Family households	89%	87%
Median age	31	29
% Under age 18	28%	25%
% Age 65 or older	5%	6%
Median household income	$102,117*	$61,094**
Average household income	$116,290*	$74,894*
Owner-occupied	88%	68%**
Renter-occupied	13%	32%**
Overall vacancy rate	5%	5%

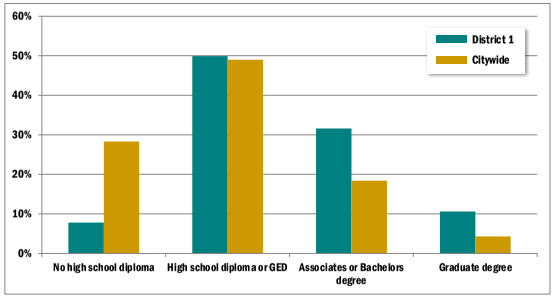
*Source: US Census Bureau American Community Survey 2009-2013 Estimate
**Source: US Census Bureau 2014 Estimate
All other data from: 2010 US Census Profile, ESRI Business Analyst Online

HOUSEHOLD MEDIAN INCOME CHARACTERISTICS



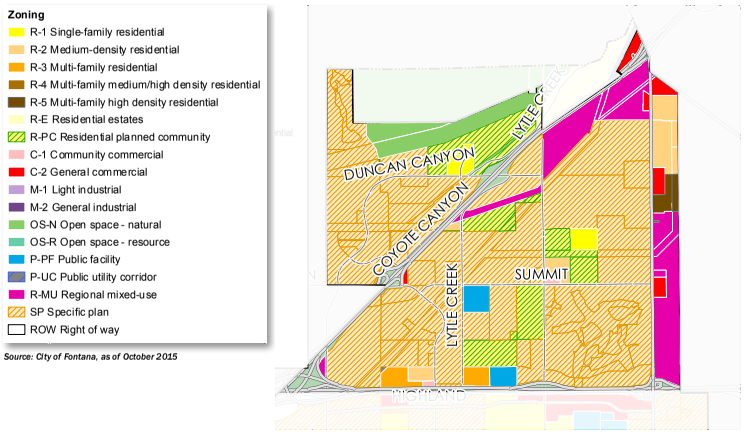
Source: 2009-2013 US Census American Community Survey Estimate

EDUCATIONAL ATTAINMENT (25+ YEARS OF AGE)



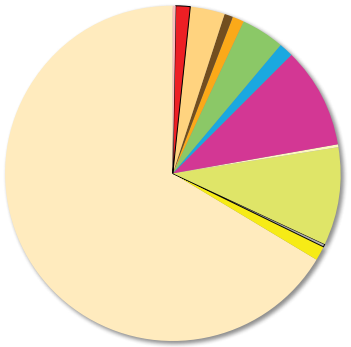
Source: 2009-2013 US Census American Community Survey Estimate

EXISTING ZONING



Source: City of Fontana, as of October 2015

ZONING "LAND BUDGET"



ZONING DISTRICT	AREA (ACRES)	% OF DISTRICT
Community commercial	15	0%
General commercial	86	2%
General industrial	–	0%
Light industrial	–	0%
Medium-density residential	168	3%
Multi-family high density residential	41	1%
Multi-family medium-/high-density residential	–	0%
Multi-family residential	63	1%
Open space–natural	218	4%
Open space–resource	–	0%
Public facility	69	1%
Public utility corridor	1	0%
Regional mixed-use	507	10%
Residential estates	11	0%
Residential planned community	491	9%
Right of way	22	0%
Single-family residential	67	1%
Specific plan	3,455	66%

DISTRICT 2



POPULATION CHARACTERISTICS

	DISTRICT 2	FONTANA
Total population	70,383*	204,950**
Total households	16,652*	48,130**
Total housing units	17,243*	51,857**

DEMOGRAPHIC CHARACTERISTICS

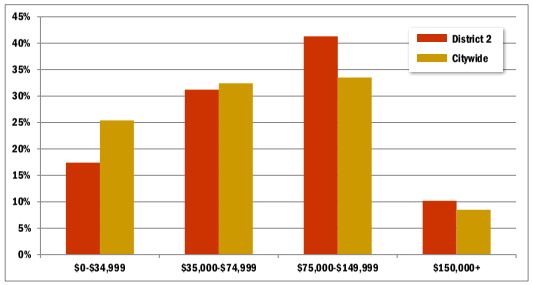
	DISTRICT 2	FONTANA
White	46%	47%
Black	12%	10%
American Indian	1%	1%
Asian	9%	6%
Pacific Islander	0%	0.3%
Some other race	27%	30%
Population reporting two or more races	5%	5%
Total Hispanic population, any race	62%	67%

HOUSEHOLD CHARACTERISTICS

	DISTRICT 2	FONTANA
Average household size	4.0	4.1**
% Family households	89%	87%
Median age	30	29
% Under age 18	26%	25%
% Age 65 or older	6%	6%
Median household income	$76,277*	$61,094**
Average household income	$84,143*	$74,894*
Owner-occupied	79%	68%**
Renter-occupied	21%	32%**
Overall vacancy rate	5%	5%

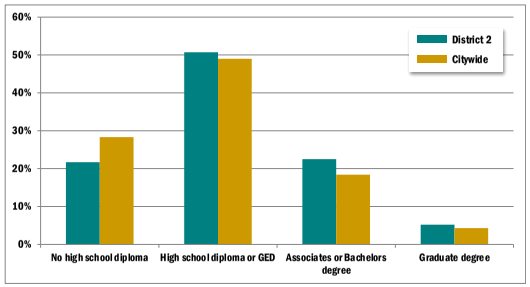
*Source: US Census Bureau American Community Survey 2009-2013 Estimate
**Source: US Census Bureau 2014 Estimate
All other data from: 2010 US Census Profile, ESRI Business Analyst Online

HOUSEHOLD MEDIAN INCOME CHARACTERISTICS



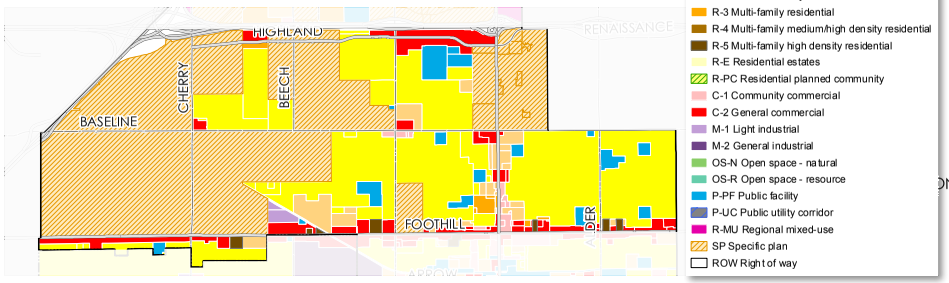
Source: 2009-2013 US Census American Community Survey Estimate

EDUCATIONAL ATTAINMENT (25+ YEARS OF AGE)



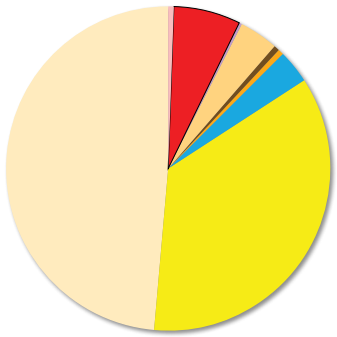
Source: 2009-2013 US Census American Community Survey Estimate

EXISTING ZONING



Source: City of Fontana, as of October 2015

ZONING "LAND BUDGET"



ZONING DISTRICT	AREA (ACRES)	% OF DISTRICT
Community commercial	47	1%
General commercial	468	7%
General industrial	–	0%
Light industrial	27	0%
Medium-density residential	273	4%
Multi-family high-density residential	41	1%
Multi-family medium-/high-density residential	–	0%
Multi-family residential	44	1%
Open space—natural	–	0%
Open space—resource	–	0%
Public facility	237	3%
Public utility corridor	–	0%
Regional mixed-use	–	0%
Residential estates	–	0%
Residential planned community	–	0%
Right of way	–	0%
Single-family residential	2,504	35%
Specific plan	3433	49%

DISTRICT 3



POPULATION CHARACTERISTICS

	DISTRICT 3	FONTANA
Total population	68,659*	204,950**
Total households	16,868*	48,130**
Total housing units	17,832*	51,857**

DEMOGRAPHIC CHARACTERISTICS

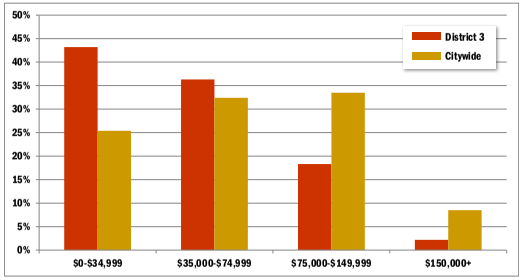
	DISTRICT 3	FONTANA
White	48%	47%
Black	6%	10%
American Indian	1%	1%
Asian	1%	6%
Pacific Islander	0%	0.3%
Some other race	39%	30%
Population reporting two or more races	5%	5%
Total Hispanic population, any race	80%	67%

HOUSEHOLD CHARACTERISTICS

	DISTRICT 3	FONTANA
Average household size	4.0	4.1**
% Family households	82%	87%
Median age	27	29
% Under age 18	28%	25%
% Age 65 or older	7%	6%
Median household income	$40,350*	$61,094**
Average household income	$51,137*	$74,894*
Owner-occupied	47%	68%**
Renter-occupied	53%	32%**
Overall vacancy rate	6%	5%

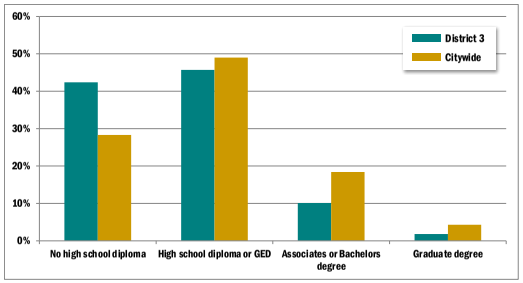
*Source: US Census Bureau American Community Survey 2009-2013 Estimate
**Source: US Census Bureau 2014 Estimate
All other data from: 2010 US Census Profile, ESRI Business Analyst Online

HOUSEHOLD MEDIAN INCOME CHARACTERISTICS



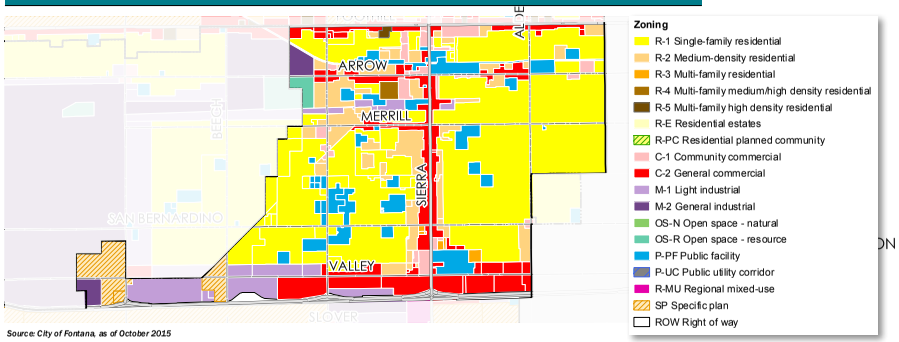
Source: 2009-2013 US Census American Community Survey Estimate

EDUCATIONAL ATTAINMENT (25+ YEARS OF AGE)



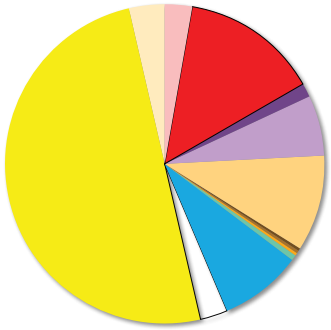
Source: 2009-2013 US Census American Community Survey Estimate

EXISTING ZONING



Source: City of Fontana, as of October 2015

ZONING "LAND BUDGET"



ZONING DISTRICT	AREA (ACRES)	% OF DISTRICT
Community commercial	172	3%
General commercial	794	14%
General industrial	78	1%
Light industrial	350	6%
Medium-density residential	558	10%
Multi-family high-density residential	8	0%
Multi-family medium-/high-density residential	21	0%
Multi-family residential	20	0%
Open space—natural	–	0%
Open space—resource	36	1%
Public facility	477	8%
Public utility corridor	–	0%
Regional mixed-use	2	0%
Residential estates	–	0%
Residential planned community	–	0%
Right of way	159	3%
Single-family residential	2,867	50%
Specific plan	192	3%

DISTRICT 4



POPULATION CHARACTERISTICS

	DISTRICT 4	FONTANA
Total population	37,485*	204,950**
Total households	9,010*	48,130**
Total housing units	9,569*	51,857**

DEMOGRAPHIC CHARACTERISTICS

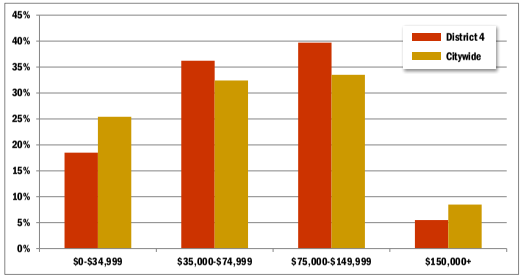
	DISTRICT 4	FONTANA
White	48%	47%
Black	10%	10%
American Indian	1%	1%
Asian	6%	6%
Pacific Islander	0%	0.3%
Some other race	29%	30%
Population reporting two or more races	5%	5%
Total Hispanic population, any race	71%	67%

HOUSEHOLD CHARACTERISTICS

	DISTRICT 4	FONTANA
Average household size	4.1	4.1**
% Family households	88%	87%
Median age	29	29
% Under age 18	28%	25%
% Age 65 or older	5%	6%
Median household income	$40,350*	$61,094**
Average household income	$51,137*	$74,894*
Owner-occupied	77%	68%**
Renter-occupied	23%	32%**
Overall vacancy rate	5%	5%

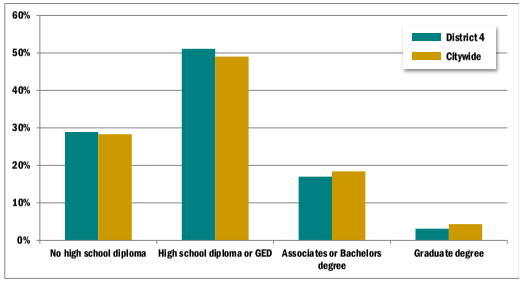
*Source: US Census Bureau American Community Survey 2009-2013 Estimate
**Source: US Census Bureau 2014 Estimate
All other data from: 2010 US Census Profile, ESRI Business Analyst Online

HOUSEHOLD MEDIAN INCOME CHARACTERISTICS



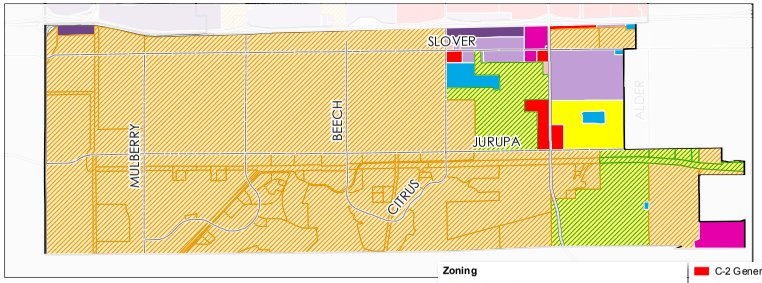
Source: 2009-2013 US Census American Community Survey Estimate

EDUCATIONAL ATTAINMENT (25+ YEARS OF AGE)



Source: 2009-2013 US Census American Community Survey Estimate

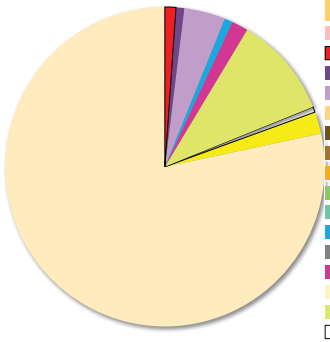
EXISTING ZONING



Source: City of Fontana, as of October 2015

Zoning
- R-1 Single-family residential
- R-2 Medium-density residential
- R-3 Multi-family residential
- R-4 Multi-family medium/high density residential
- R-5 Multi-family high density residential
- R-E Residential estates
- R-PC Residential planned community
- C-1 Community commercial
- C-2 General commercial
- C-2 General commercial
- M-1 Light industrial
- M-2 General industrial
- OS-N Open space - natural
- OS-R Open space - resource
- P-PF Public facility
- P-UC Public utility corridor
- R-MU Regional mixed-use
- SP Specific plan
- ROW Right of way

ZONING "LAND BUDGET"



ZONING DISTRICT	AREA (ACRES)	% OF DISTRICT
Community commercial	8	0%
General commercial	111	1%
General industrial	81	1%
Light industrial	355	4%
Medium-density residential	–	0%
Multi-family high density residential	–	0%
Multi-family medium/high density residential	–	0%
Multi-family residential	–	0%
Open space—natural	–	0%
Open space—resource	–	0%
Public facility	96	1%
Public utility corridor	–	0%
Regional mixed-use	132	1%
Residential estates	–	0%
Residential planned community	932	10%
Right of way	55	1%

SPHERE OF INFLUENCE

SOI



POPULATION CHARACTERISTICS

	S.O.I.	FONTANA
Total population	25,340*	204,950**
Total households	5,106*	48,130**
Total housing units	5,361*	51,857**

DEMOGRAPHIC CHARACTERISTICS

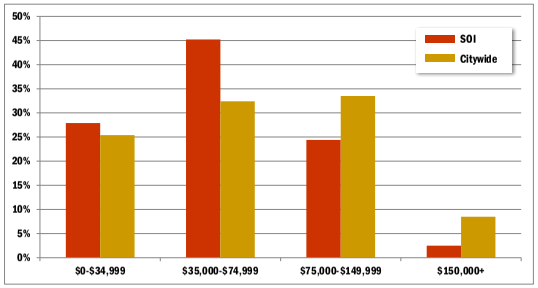
	S.O.I.	FONTANA
White	49%	47%
Black	3%	10%
American Indian	1%	1%
Asian	2%	6%
Pacific Islander	0.3%	0.3%
Some other race	40%	30%
Population reporting two or more races	4%	5%
Total Hispanic population, any race	87%	67%

HOUSEHOLD CHARACTERISTICS

	S.O.I.	FONTANA
Average household size	4.8	4.1**
% Family households	89%	87%
Median age	27	29
% Under age 18	30%	25%
% Age 65 or older	5%	6%
Median household income	$69,071*	$61,094**
Average household income	$76,267*	$74,894*
Owner-occupied	94%	68%**
Renter-occupied	33%	32%**
Overall vacancy rate	5%	5%

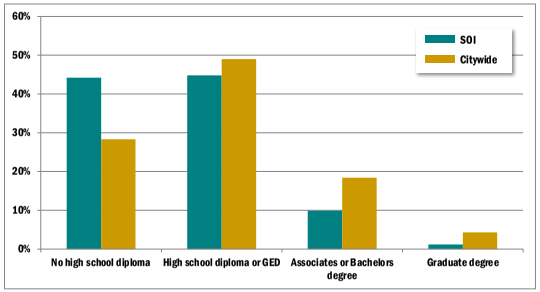
*Source: US Census Bureau American Community Survey 2009-2013 Estimate
**Source: US Census Bureau 2014 Estimate
All other data from: 2010 US Census Profile, ESRI Business Analyst Online

HOUSEHOLD MEDIAN INCOME CHARACTERISTICS



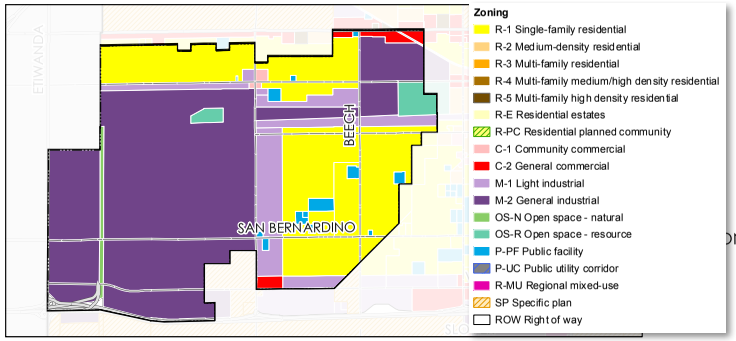
Source: 2009-2013 US Census American Community Survey Estimate

EDUCATIONAL ATTAINMENT (25+ YEARS OF AGE)



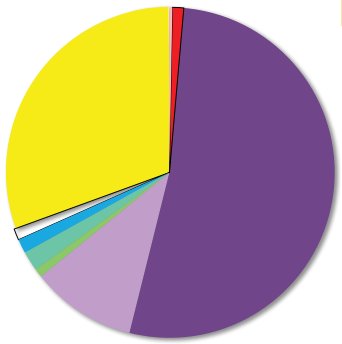
Source: 2009-2013 US Census American Community Survey Estimate

EXISTING ZONING



Source: City of Fontana, as of October 2015

ZONING "LAND BUDGET"



ZONING DISTRICT	AREA (ACRES)	% OF DISTRICT
Community commercial	15	0%
General commercial	67	1%
General industrial	2,666	52%
Light industrial	525	10%
Medium-density residential	–	0%
Multi-family high-density residential	–	0%
Multi-family medium-/high-density residential	–	0%
Multi-family residential	–	0%
Open space—natural	41	1%
Open space—resource	94	2%
Public facility	80	2%
Public utility corridor	–	0%
Regional mixed-use	–	0%
Residential estates	–	0%
Residential planned community	–	0%
Right of way	51	1%
Single-family residential	1,552	30%
Specific plan	–	0%

G. Green Networks

Fontana's green networks include conservation lands, parks, and public and private green spaces. There are over 1,000 acres of land for public use. While most of the city is developed, habitat for native species still exists, especially in the far north and south. A majority of the residential areas are within approximately one-half-mile walking distance of a park. The extended drought has led to the replacement of landscaping in some public areas, such as medians, with decorative "hardscape." Xeriscaping—plantings of drought-tolerant species appropriate to a desert environment, such as succulents and cacti—will become more prevalent as water conservation initiatives continue.

☞ *Findings*

- **Fontana's location between Jurupa Hills and the San Gabriel Mountains creates a unique environment and contributes to city identity.**
- **41 public parks on 366 acres provide recreational opportunities.**
- **There are more than 1,000 acres for public use.**
- **Mary Vagle Nature Center and Martin Tudor Jurupa Hills Regional Park and Splash Park in southern Fontana are popular attractions for the entire city.**
- **Five community centers, including the Senior Center, serve all parts of the city.**

Landscape character

The City of Fontana is located on a desert valley floor between the San Gabriel Mountains to the north and the Jurupa Hills to the south. The San Gabriel Mountains are the city's most prominent visual feature, rising dramatically above the community with scenic view corridors toward the mountains. Panoramic views also exist from the base of the mountains toward Fontana. The Jurupa Hills offer scenic vistas of the San Gabriel Mountains and surrounding valleys, particularly from Martin Tudor Jurupa Hills Regional Park, which contains bicycle and hiking trails. Other significant natural landforms in Fontana include Lytle Creek and other dry washes, that have intermittent water flow from the mountains and are visible from the I-15 corridor in the northern portion of the City.

Fontana's open space is a mix of foothills, utility corridors, and parks. Open space on foothills is found to the north at the base of the San Gabriel Mountains and to the south in the Jurupa Hills. The nearby mountains are part of the Angeles and San Bernardino National Forests, and trailheads in their foothills connect to the Pacific Crest Trail that eventually reaches as far as Mexico and Canada.

Habitat

Because most of the city has been developed, naturally occurring habitat tends to be limited to the far north and south of the city, at the base of the San Gabriel Mountains and the Jurupa Hills.

There are two land cover types classified as "developed" and "disturbed," and eight plant communities in the city:

- Riversidean sage scrub
- Northern mixed chaparral
- Riversidean alluvial fan sage scrub
- Southern sycamore alder riparian woodland
- California walnut woodland
- Non-native grassland
- Vineyard
- Ornamental woodland

Likely sensitive plant species based on records and habitat availability include:

- Plummer's mariposa lily (*Calochortus plummerae*)
- Parry's spineflower (*Chorizanthe parryi var. parryi*)
- Mesa horkelia (*Horkelia cuneate var. puberula*)
- Robinson's pepper-grass (*Lepidium virginicum var. robinsonii*)
- Short-joint beavertail (*Opuntia basilaris var. brachyclada*).

Thirteen (13) sensitive wildlife species are known to regularly occur within the City of Fontana and are assumed to be present:

- California horned lark (*Eremophila alpestris actia*)
- Cooper's hawk (*Accipiter cooperii*)
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)
- Golden eagle (*Aquila chrysaetos*)
- Bell's sparrow (*Artemisiospiza belli*)
- Burrowing owl (*Athene cunicularia,* BUOW). Suitable habitat for BUOW is present in many areas in the northern city limits where extensive non-native grasslands remain, as well as along a series of flood-control basins located immediately east of Etiwanda Avenue, particularly between San Bernardino Avenue and Slover Avenue, and in many vacant lots located throughout the city.
- Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*),
- Northern harrier (*Circus cyaneus*)
- Loggerhead shrike (*Lanius ludovicianus*)
- Los Angeles pocket mouse (*Perognathus longimembris brevinasus*),
- Coast horned lizard (*Phrynosoma blainvillii*)
- Coastal California gnatcatcher (*Polioptila californica,* CAGN). Suitable habitat for CAGN is present in both the northern and southern city limits where RSS grows in the San Gabriel Mountains and Jurupa Hills, respectively.
- Delhi Sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*, DSF). Suitable habitat for DSF is located along the city's southern boundary in the Jurupa Hills, particularly along the southern terminus of Poplar Avenue, where a preserve has been set aside specifically for this species.

There is potential for an additional nine sensitive wildlife species based on habitat requirements:

- Silvery legless lizard (*Anniella pulchra pulchra*),
- Orange-throated whiptail (*Aspidoscelis hyperythra*),
- Swainson's hawk (*Buteo swainsoni*),

- Red-diamond rattlesnake (*Crotalus ruber*)
- Western mastiff bat (*Eumops perotis californicus*)
- San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)
- San Diego desert woodrat (*Neotoma lepida intermedia*)
- Southern grasshopper mouse (*Onychomys torridus ramona*)
- Yellow warbler (*Setophaga petechia*).

Suitable habitat for the San Bernardino kangaroo rat (*Dipodomys merriami parvus*) exists in the north, but it has been cut off from natural water processes by I-15 and associated flood control, and recent surveys for this species have not found it. Protocol surveys are required for this species in north Fontana under the North Fontana Multiple Species Habitat Conservation Plan. Regular surveys within preserved habitat for the Delhi Sands flower-loving fly are required every three years or after disturbance, based on a US Fish and Wildlife Service Biological Opinion.

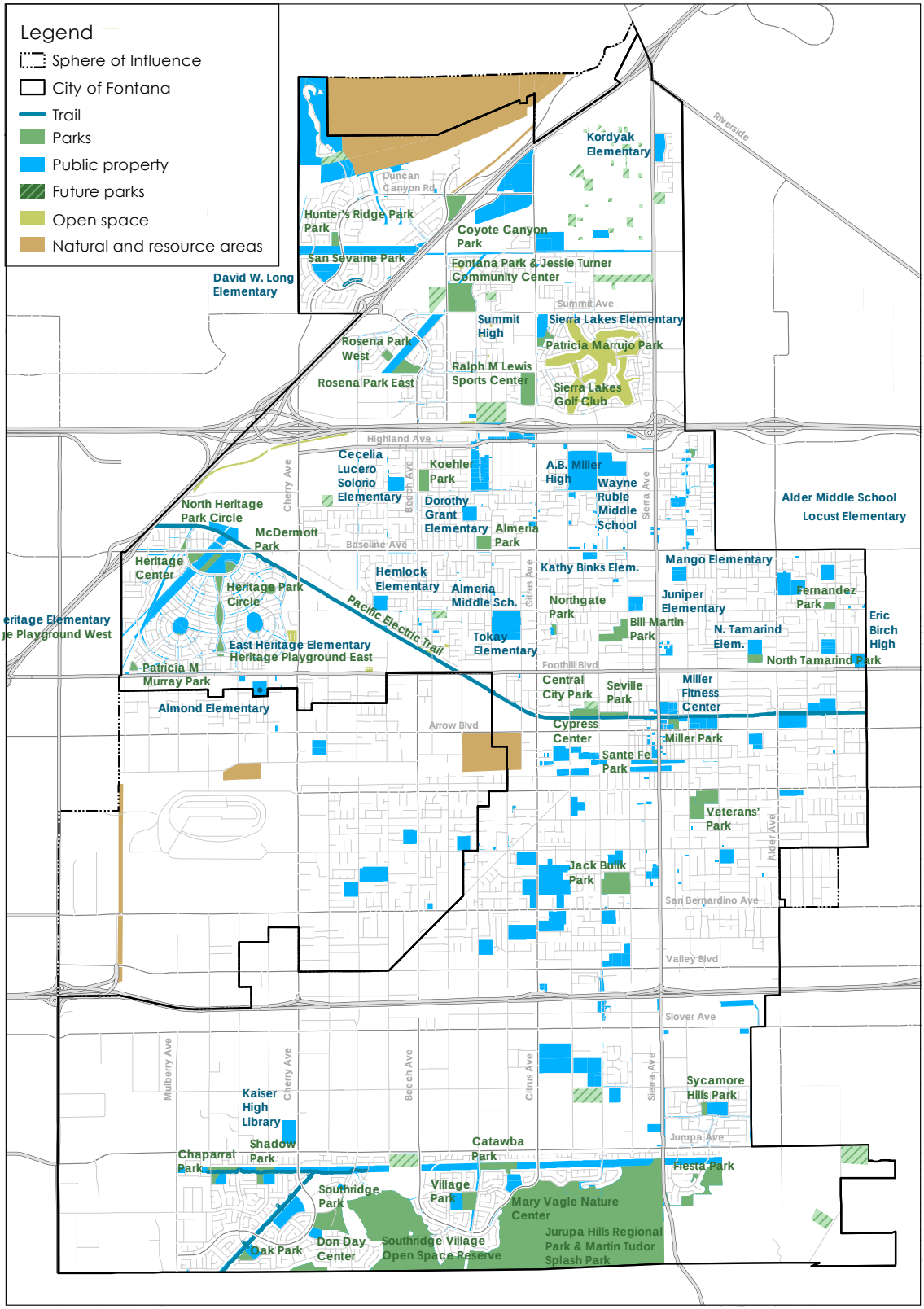
Fontana has five areas that are designated as "waters of the United States" and wetlands that fall under the jurisdiction of the U.S. Army Corps of Engineers. Areas of California Department of Fish and Wildlife jurisdictional riparian resources occur within the city. There are three (3) main drainage features flowing from the foothills in the northern section of the city and two (2) or three (3) small drainages in the south, which flow from the Jurupa Hills. Within the developed areas are two (2) main drainage features, which have been previously modified for flood control.

Parks

The City owns and manages 41 parks over 366 acres and 1,255 acres of land for public use, including large regional parks. The City defines its parks in two categories, Neighborhood Parks and Community Parks. Neighborhood Parks serve an area within a half mile (a "comfortable walking distance" as defined by the Public Works Department), while Community Parks serve a larger area within a 1.5-mile radius.

The City of Fontana partners with three school districts in joint/exclusive-use agreements of public land to provide for the recreational needs of the community. In 2008, the City partnered with 49 schools within the Fontana Unified School District, the Colton Joint Unified School District and the Etiwanda School District for use of approximately 650 acres of land on school sites. The City counts 25% of this land as usable recreation areas in its reporting, resulting in a measure of 163 acres of "joint-use" facilities.

Additional public lands that are not classified as parks are utility corridors, school sports fields, land in the foothills, and pockets of open space throughout Fontana's neighborhoods. These public lands are sometimes upgraded with trails and amenities, and in other locations are simple open areas. Open spaces are also included in the City's zoning as Natural area (OS-N) and Resource area (OS-R).



Parks and Open Spaces
October, 2015
Data source: City of Fontana, Esri 2015

Park level of service

The Trust for Public Land has developed a metric called ParkScore® to measure park system quality and compare communities.[15] Their methodology includes acreage, facilities and investment, and access:

- **Acreage:** median park size plus park acres as a percent of city area (adjusted for airports and similar areas)
- **Facilities and investment:** total spending per resident and the average of per capita provision of four types of facilities—basketball hoops, dog parks, playgrounds, recreation/senior centers
- **Access:** the percent of population living within a ten-minute walk (1/2 mile) on the public road network of a park

With an estimated population of 204,312 residents in 2015, the city provides approximately 6.1 acres of park per 1,000 residents, including trails and active parks. This is higher than the park acreage standard of 5 acres of park per 1,000 residents called for by the 2003 Fontana General Plan. A majority, but not all, of the residential areas within the city are within walking distance (0.5 miles) as the crow flies (i.e., not adjusted for actual use of the road system) or short driving distance (1.5 miles) of a park (see Exhibit 3-5 on the facing page from the City of Fontana's 2008 Parks, Recreation and Trails Master Plan).

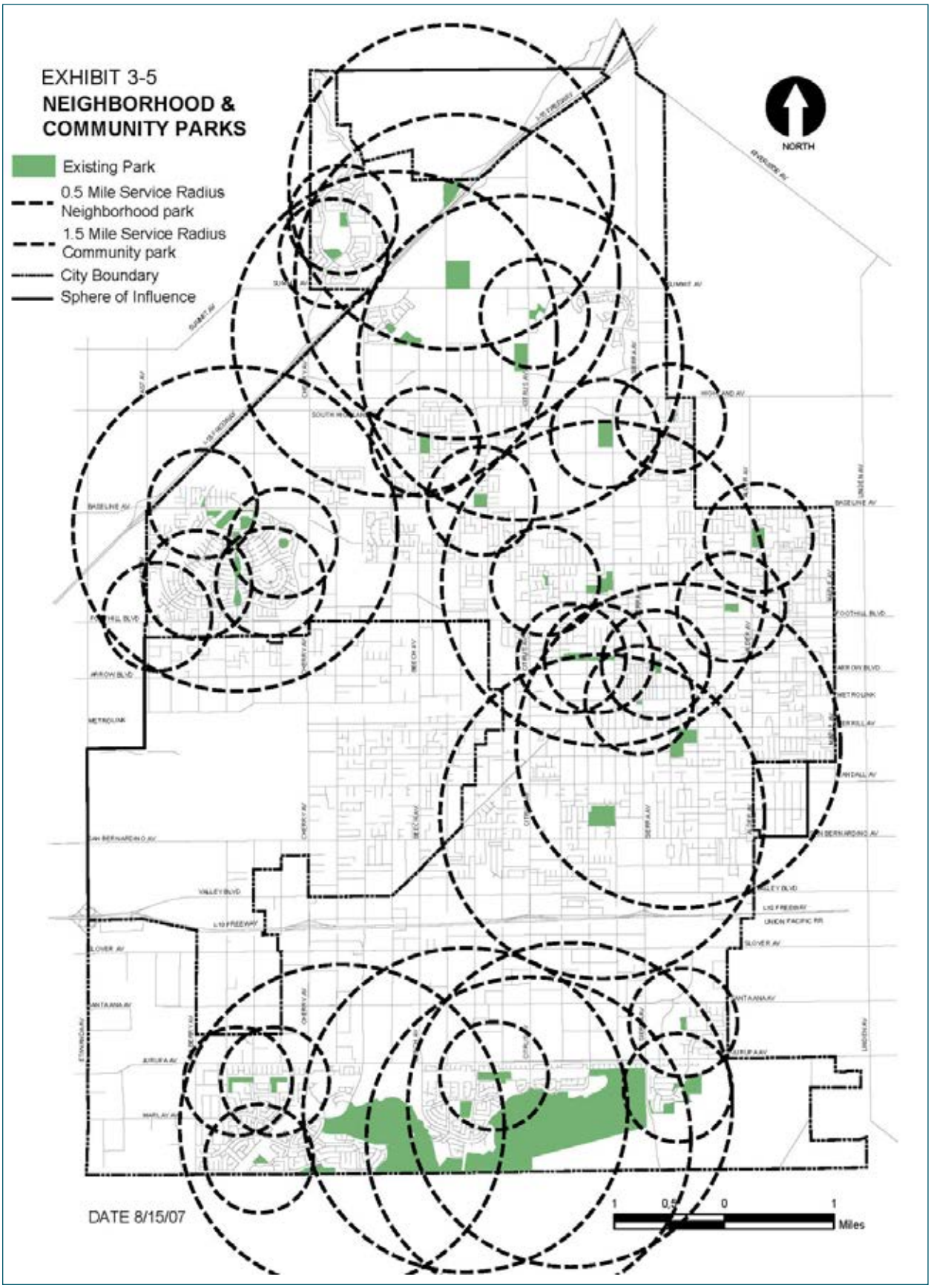
New park land

The City currently collects three acres of parkland or in-lieu fees from new residential subdivisions for every 1,000 residents in accordance with California Government Code Section 66477 (Quimby Act). Additional sources for the City to obtain parkland include general fund revenues, developer impact fees, state and federal grants, user group contributions, school district joint use contributions, and concessions. Other methods that the City pursues to supplement parkland include encouraging the development of private open space and recreational amenities, in addition to required parks, in large residential projects.

The 2008 Parks, Recreation and Trails Master Plan

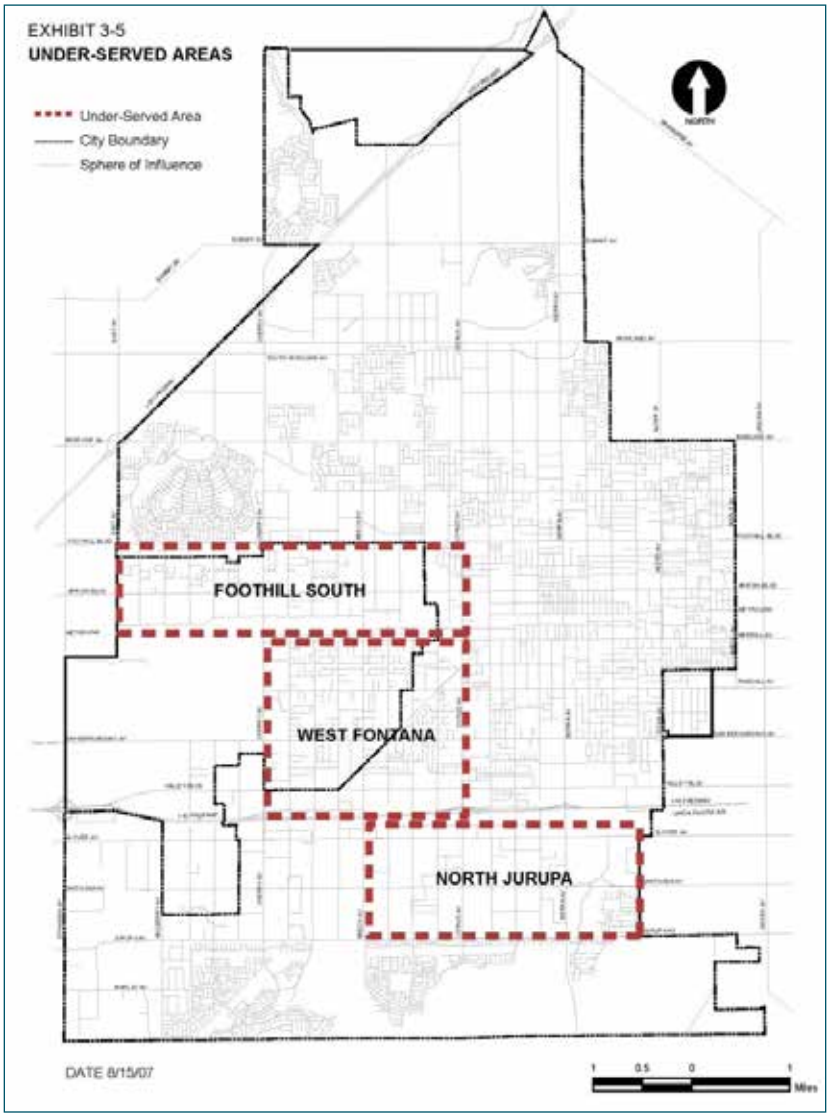
The City of Fontana created a Parks, Recreation and Trails Master Plan in 2008 in order to review current facilities and plan for expansions and improvements to City-owned parks and trails. This plan included analysis of unincorporated areas within the city's Sphere of Influence. The 2008 plan recommended expansion of existing parks and recreation centers, improvements to existing City parks and joint-use facilities, development of new parks in the city and its Sphere of Influence, and development of more recreational trails and open space. The plan recommended specific improvements at individual parks, including enhancements like resurfaced parking lots, picnic shelters, new athletic fields and courts, trail extensions, and more. Recommendations included improvements for existing parks, expansion of existing parks (including Mango Linear Park, Seville Park, Northgate Park and Southridge Community Park) and development of new parks (including 13 acres of park in the Arboretum Specific Plan area, 20 acres within the Valley Trail Specific Plan area, and 19 acres within the Westgate Specific Plan area—

[15] See www.parkscore.tpl.org.



Source: Fontana Parks, Recreation and Trails Master Plan, 2008.

most of which have been designated, as of 2015). The plan also identified three "under-served" areas where new parks should be created to serve existing and future populations. Since 2008, new community centers have been constructed, including the Jessie Turner Health and Wellness Center, the Fontana Senior Community Center on Ceres Avenue, and the Heritage Neighborhood Center.



Source: Fontana Parks, Recreation and Trails Master Plan, 2008.

The 2008 plan proposed a network of trails, including recreational trails, following utility and flood-control corridors and bicycle routes through the existing city street network. The proposed network of trails was intended to connect Fontana to nearby regional open spaces and neighboring cities. The plan recommended adaptations of existing streets to create bicycle infrastructure and the use of bike-friendly design standards for future development. (See section 7.A of this report for more information on bicycle routes.)

Accomplishments since the 2003 General Plan

Park goals in the 2003 Plan included providing parks accessible to all segments of the population and in newly developed areas; joint use agreements with school districts; and funding of parks and trails through the capital improvement program. The City has made significant investments in the parks and trail system including creation of Fontana Park, the Parks and Recreation Master Plan, the San Sevaine Trail Connectivity Plan, the Pacific Electric Trail, and a plan for a downtown amphitheater.

H. Health and Wellness

Health was not a focus in the 2003 General Plan, but in 2004 the City created the Healthy Fontana program as a result of concerns about city health statistics. The City is one of a growing number of jurisdictions recognizing the importance of health and wellness to quality of life. Individual and community health can be influenced by both physical and socioeconomic factors. The socioeconomic determinants of health include factors such as income level, education, social support, and public safety, while physical determinants include housing and community design, physical barriers, and exposure to toxic substances. Health and wellness conditions are related to five key domains: population characteristics, personal well-being, neighborhoods and place, community, and learning and opportunity.

☞ *Findings*

- **Fontana's health profile includes:**
  - **> Higher-than-average rates of asthma (17.7% percent diagnosed, compared to 15.4% statewide)**
  - **> High rate of adult obesity (28.7%, compared to 22.3% statewide)**
  - **> Low percentage of students meeting physical fitness standards (38.5% 5th grade, 44.5% 7th grade, 50.2% 9th grade)**
  - **> High percentage of students reporting alcohol or drug use (26% in 7th grade, 38% in 9th grade, 41% in 11th grade, compared to Healthy People 2020 objective of 16.6%)**
- **One fifth of Fontana's children live in poverty, an indicator for health and wellness concerns.**
- **Fontana, like the rest of the Inland Empire, is under-served by primary care physicians, despite being the location of a major regional hospital.**
- **The Fontana Kaiser Permanente Hospital, built in 1955, opened a new, state-of-the-art facility in 2013.**

Health conditions and disparities in Fontana

The table on the next page provides health data by ZIP code and includes comparisons to the city as a whole, the county, and the state. The data comes from the Ask CHIS Neighborhood Edition, which provides health estimates at the local level through the California Health Interview Survey (CHIS) and the UCLA Center for Health Policy Research. Fontana health conditions that indicate worse outcomes than in San Bernardino County and California as a whole include child asthma; adult diabetes; adult food insecurity; fair or poor health in both children and adults; adult obesity; and overweight in children and teens. In general, health conditions are worse in central Fontana than in the north or the south. The northern part of Fontana tends to be more affluent, and health status is often tied to income levels. However, the data below indicate that this may not always be the case. For example, reported adult diabetes levels are lower in central Fontana than in the northern and southern parts of the city. This could also result from under-diagnosis because of less access to health care in central and SOI Fontana.

EXHIBIT 24 **HEALTH CONDITIONS**

CONDITION	FONTANA				SAN BERNARDINO COUNTY	CALIFORNIA
	92335 (CENTRAL AND S.O.I.)	92336 (NORTH OF FOOTHILL BLVD)	92337 (SOUTH OF I-10)	CITYWIDE		
Asthma (children)	16.6%	18.4%	N/A	17.7%	17.6%	15.4%
Asthma (adults)	10.8%	13.3%	14.5%	12.2%	13.6%	13.7%
Diabetes (adults)	12.4%	14.4%	15.5%	13.1%	10.3%	8.4%
Food Insecurity (adults)	22.8%	11.6%	14.0%	15.5%	11.3%	8.4%
Fair or poor health (children)	4.2%	3.1%	N/A	3.2%	2.8%	6.0%
Fair or poor health (adults)	31.5%	24.5%	21.5%	26.0%	22.2%	17.9%
Heart Disease (adults)	5.4%	4.8%	4.7%	5.1%	6.5%	6.3%
Serious psychological distress (adults)	7.6%	7.0%	6.2%	7.1%	7.6%	7.9%
Obesity (adults)	40.0%	32.4%	36.9%	35.5%	32.7%	24.8%
Overweight for age (2-11 yrs)	24.4%	N/A	N/A	19.6%	16.3%	13.6%
Overweight for age (12-17 yrs)	N/A	N/A	N/A	38.1%	34.7%	32.4%
Regular physical (5-17 yrs)	20.0%	21.2%	N/A	21.2%	23.2%	20.8%
Walked at least 150 minutes (adults)	28.1%	29.0%	27.9%	28.6%	28.1%	33.3%
Less than high school (adults)	39.4%	18.1%	27.3%	27.0%	21.6%	18.7%
English only (adults)	27.9%	50.3%	36.3%	40.8%	59.0%	56.9%
Children living in poverty (0-17 years)	31.4%	12.2%	14.2%	20.3%	23.8%	20.9%
Adults living in poverty (adults)	19.5%	7.7%	9.3%	12.3%	14.5%	13.0%
Not working (adults)	46.7%	39.0%	42.4%	42.3%	46.1%	42.5%
Working (adults)	53.2%	61.0%	57.5%	57.6%	53.0%	57.0%

Sources: AskCHIS Neighborhood Edition, launched in 2014. All health estimates in AskCHIS Neighborhood Edition are based on data from the 2011-2012 California Health Interview Survey. All socio-demographic indicators come from the 2008-2012 American Community Survey (ACS) 5 year summary tables. Data retrieved June 30, 2015, at http://askchisne.ucla.edu/ask/_layouts/ne/dashboard.aspx#/

Fontana residents have lower rates of physical activity compared with county and state and averages, and elementary school students in Fontana have comparatively lower levels of physical fitness compared with the county and the state. While levels of fruit and vegetable consumption in Fontana are roughly on par with the county and the state, they are still quite low, with nearly three-quarter of Fontana adults consuming inadequate amounts of fruit and vegetables each day.

Health care facilities

Fontana, like the rest of the Inland Empire, is under-served by primary care physicians, compared to the state and the nation, despite the presence of a major regional hospital.

- **Kaiser Permanente Hospital.** Kaiser Permanente first built a hospital in Fontana in 1955. A new, state-of-the-art hospital opened in 2013 with 490,000 square feet and 314 beds. It offers more than

20 specialty services and serves some 440,000 members of the Kaiser Permanente health care system. The seven-story building was designed and built to meet high standards of sustainability and resilience, using reclaimed water for landscape and cooling, LEED certification to make the building more energy efficient and sustainable, a white roof to reflect heat, and earthquake-resistant design. The hospital is also a multi-residency teaching hospital. Additional medical services and medical office buildings are adjacent to the hospital.

- **Kaiser Permanente Clinic**. A clinic staffed with nurse practitioners is in the Target store in North Fontana at 15272 Summit Avenue.
- **Water of Life Mobile Medical Clinic.** Water of Life Community Church provides free health screenings, health management, and health education on the first Saturday of every month at 16779 Spring Street. The clinic includes an on-site lab and performs EKGs and blood work. It is staffed by volunteer physicians, nurses, and nursing students.

Healthy Fontana

The City of Fontana and community organizations created the award-winning Healthy Fontana program in 2004. The program promotes wellness through healthy eating, active lifestyles, behavior change, sports, gardening, and farmers' markets. One of the stated goals of the Healthy Fontana program is also to promote physical design for healthy living. The programs within Healthy Fontana include:

- **Steps Along the Way Walking Club**. Healthy Fontana's Steps Along the Way Walking Club promotes the health benefits of walking and exercising in a safe and community-oriented environment.
- **Fontana After-School Program (FASP).** The program gives K-6 students an opportunity to enrich their minds toward a healthy lifestyle with healthy snacks, fitness training and computer fundamentals.
- **Junior Chef Cooking Classes**. The Junior Chef Cooking class teaches children how to cook/prepare healthy dishes and snacks.
- **Healthier Living: Managing Ongoing Health Conditions.** A six-week workshop helps participants take control of ongoing health conditions on a daily basis.
- **Pathways to Wellness Program.** Teaches participants behavioral approaches to managing and controlling stress and cravings and developing new eating and fitness habits.
- **Smoking Cessation Program**. Helps participants learn techniques to become smoke-free..
- **Let's Move! Child Care Program.** The City of Fontana and Healthy Fontana partner with Let's Move! to provide early child care that includes physical activity and healthy food.



- **Sports Programs.** Provides residents of all ages an organized recreational sport experience during evenings and weekends to meet the needs of the commuting population
- **Re-think your Drink.** In 2013, Healthy Fontana staff included 1,133 children in the "Re-Think Your Drink" campaign focused on consuming beverages with zero or no added sugars.
- **Student Gardens.** Healthy Fontana helped plant student gardens and provided samples of fresh garden-grown vegetables in schools.
- **Farmers' Markets.** The downtown market is a great success and averages 200-250 people each Saturday morning. Sales average $3,000-$3,500 on market days. In 2014, market staff educated 3,600 students, providing hands-on information about where fruits and vegetables come from, how they are grown, and the benefit of buying produce from a local farmer. Additional farmers' market locations include the library, Senior Center, Kaiser Hospital, and South Fontana.



- **Communities of Excellence in Nutrition, Physical Activity, and Obesity Prevention. (CX3).** Healthy Fontana participated in CX3, an initiative of the California Department of Public Health, to assess neighborhoods in relation to a variety of healthy nutrition and physical activity benchmarks.
- **Safe Routes to Schools Program.** The City is improving pedestrian safety and access to schools in order to promote walking to school.
- **Food Desert Map.** A food desert map was prepared in 2011 to identify areas where residents do not have easy options for buying fresh fruits and vegetables and other nutritious foods.
- **City Community Garden.** Garden plots are available to residents at 8380 Cypress Avenue.

I. Community Facilities And Services

Fontana's public community facilities, including public schools, are owned and operated by the City and by a variety of other agencies, including three school districts and San Bernardino County.

☞ *Findings*

- **Fontana has a variety of strong community-policing programs designed to prevent crime.**
- **Fire protection is provided through an agreement with the San Bernardino County Fire Department from seven fire stations around the city.**
- **Fontana has a full array of facilities to serve the needs of the community, including community centers, sports centers, public service buildings, cultural centers such as the theater, county libraries, auditorium, senior center, and a veterans' service center. These facilities are used by a variety of community organizations for meeting space and activities.**
- **The City organizes and promotes many recreational and cultural programs and events for all members of the community.**

Public safety

- **Fontana Police Department.** Fontana had relatively high crime rates in the 1990s but took steps to reduce crime, resulting in its being listed as one of the 20 safest cities in the country 2013. The police department has 188 sworn officers and operates out of the central police station downtown. The department is particularly known for its strong community policing/area commander program; the Fontana Reentry Support Team to assist early release prisoners, probationers, and parolees; and the Fontana Leadership Intervention Program for at-risk teens. The police also collaborate with owners and managers of multifamily housing developments in the Crime-Free Multi-Housing Program. Crime, as described by area commanders, appears to be more a question of opportunity than anything else. For example, isolated areas, particularly those with inadequate lighting, group mail boxes, and similar conditions can attract thieves. Neighbor disputes can sometimes involve the police. In general, however, there are no ongoing serious crime problems in Fontana, according to the Police Department and crime statistics. The area commanders would like to see the Crime Enforcement through Environmental Design guidelines incorporated into design standards.
- **Fontana Fire Protection District.** Created in 2008, this district provides emergency, preventive and administrative services within the city limits and the SOI through a contract with the San Bernardino County Fire Department. There are seven fire stations. One of the two Hazardous Materials Response Teams in the county is located in Fontana. In the northern part of the city, firefighters also have special expertise in dealing with wildfires in the urban/wildland interface.

Community facilities

Public facilities in Fontana include parks, three sports centers, five community centers, three cultural centers, one nature center, four public services facilities (including city hall, the community services department building, and the public works center); one veterans' resource center; the auditorium and the library. The City's Community Services Department has responsibility for parks, recreation and programming.

Schools

Fontana Unified School District (FUSD) serves most of the city and has an enrollment of 40,674 students in 46 schools during the 2015-16 academic year. Overall, each household in Fontana generates 0.7 schoolchildren. About one-third of the FUSD students are classified as English learners, and 82% receive free or reduced cost lunch.

This is the eighth consecutive year of enrollment declines. Peak enrollment was 42,050 students during the 2004-2005 academic year. The enrollment decline coincides with the Great Recession and abrupt decrease in new housing construction in Fontana.

Although enrollment has declined somewhat in recent years, the district does not have capacity where it will need it most—where entitled developments are likely to be built as residential development returns during the next ten years. FUSD expects to build a new middle school and one or two elementary schools in the next decade, depending on the pace of development. In addition, a new magnet school will be built at Merrill and Alder that will be available by lottery and include dual-launguage immersion and a pre-international baccalaureate curriculum. When FUSD disposes of property it owns, the decision-making process includes a community advisory committee and first right of refusal to public entities.

The Etiwanda School District has five schools located in Fontana serving over 4,000 students in the 2014-2015 school year. The Colton Joint Unified School District has three elementary schools in Fontana enrolling approximately 1,900 students. One elementary school located in Fontana is part of the Rialto School District. The Chaffey Joint High School District and the Rialto School District does not have a school located in Fontana but serves some students.

Facilities and improvements completed since the 2003 General Plan include the Civic Center Campus, rehabilitation of the downtown theater, the Pacific Electric Trail, Fontana Park Aquatic Center, the Jessie Turner Health and Fitness Center, the Fontana Community Senior Center, on Ceres Avenue, the Heritage Neighborhood Center, and expansion of the police facility. Downtown murals were installed and both a history museum and a downtown amphitheater are in the works. There is extensive recreational programming throughout the city as well as a range of downtown programming, including a half marathon, holiday parade, car shows, summer concerts, and arts programs

5. PROSPERITY AND OPPORTUNITY

The service sector dominates Fontana's economy, with the hospital, school district and city government ranking as the top employers. The logistics industry plays an important role, as does retail and wholesale trade. During the housing boom, there were many construction jobs in the city. However, over 90% of employed residents do not work in Fontana. The City's approach to economic development in recent decades, as Fontana became a bedroom community, has been to focus on development that brings fiscal benefits, such as retail, rather than jobs for residents. The general plan update offers the opportunity to consider new approaches to economic development for a growing community of over 200,000 people in a changing economic environment.

☞ *Findings*

- **Fontana is a middle-income community, with a median household income in the $60,000 to $65,000 range, slightly above the state median income. It is expected to grow 2.7% annually between 2015-2020.**
- **Approximately 90 percent of employed Fontanans work outside the city limits. Ten percent work in Los Angeles, 36% in Inland Empire cities, and 45% elsewhere.**
- **Fontana is now the westernmost city with available space to accommodate both residential and industrial development in the Inland Empire. However, a significant portion of unbuilt residential land has already been entitled.**
- **15% of all residents and 21% of children live in poverty.**
- **There are 43,018 jobs in Fontana, but only 13.7% are held by residents, and only 8.8% of employed residents work in Fontana. Over 70% of jobs in Fontana are in services, retail or wholesale.**
- **Kaiser Medical Group, Fontana Unified School District, and the City of Fontana are the top three employers.**
- **The construction, warehousing and logistics industries remain important economic drivers to Fontana's economy.**
- **City economic development efforts tend to focus on fiscal outcomes rather than employment.**

A. Economic Conditions

Employers and jobs in Fontana

As of 2013, there were approximately 49,000 jobs in Fontana, an increase of 0.3% since 2007, including self-employed and business owner employment.[16] Most of those jobs are not held by residents of Fontana. Services, retail trade, and wholesale trade constitute the top three employers by industry in the city. Kaiser Medical Group and two governmental agencies (Fontana Unified School District and the City of Fontana) make up the top three employers by count in the city. The construction, warehousing and logistics industries remain important economic drivers for Fontana's economy. Some of the jobs listed as being in Fontana may not actually have many employees working in the city at any one time. For example, the payroll of trucking companies may be listed as paid in Fontana, but trucking employees may be dispersed across the region rather than working in the city.

[16] SCAG, "Profile of the City of Fontana," May 2015, p. 22.

Between 2007 and 2013, during the Great Recession, the number of Fontana jobs in manufacturing and construction declined precipitously, while jobs in retail and in professional/management fields increased.[17]

- Manufacturing: -27.6%
- Construction: -18.7%
- Retail trade: +3.3%
- Professional and management: +22.1%

EXHIBIT 25 **EMPLOYERS BY CATEGORY IN FONTANA**

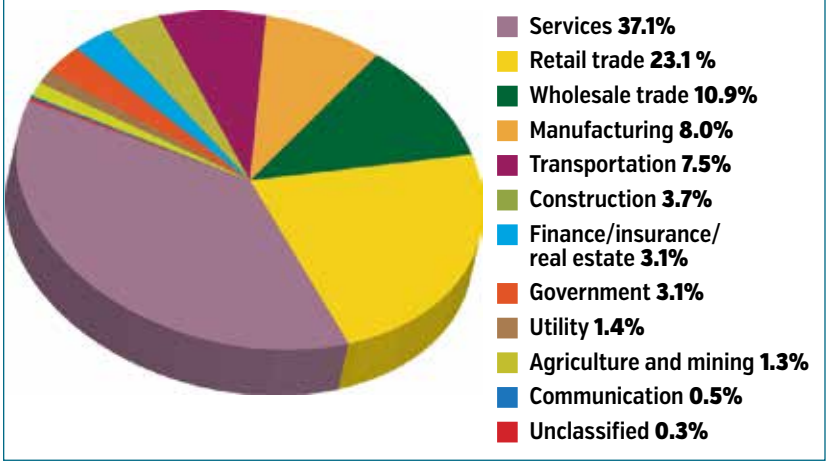


EXHIBIT 26 **TOP FIVE EMPLOYERS IN FONTANA**

Employer	*Estimated # Employees*	*% Total City Employment*
1. Kaiser Hospital and Medical Group	4,931	7.9%
2. Fontana Unified School District	4,506	7.3%
3. City of Fontana (includes part-time employees)	1,061	1.7%
4. Swift Transportation Company	1,035	1.7%
5. Target	657	1.1%
Top 5 Total	**12,190**	**19.7%**

Source: City of Fontana Comprehensive Annual Financial Report, 2014.

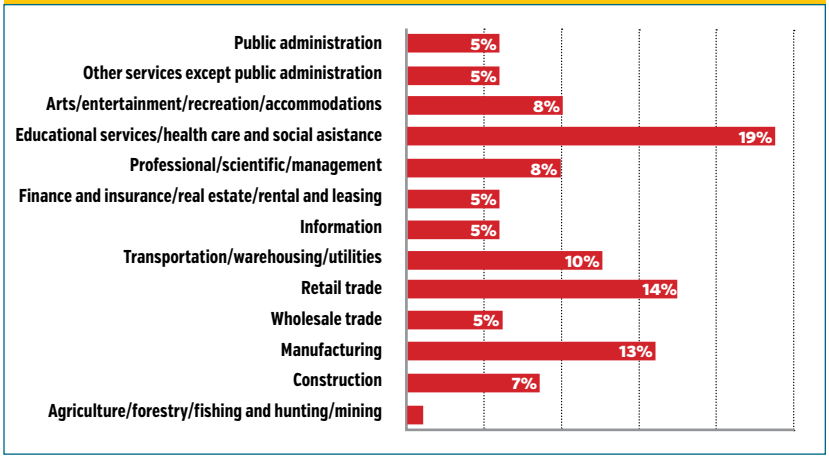
Workers who live in Fontana

The unemployment rate for Fontana residents has dropped steadily to 6.5% in late 2015 since the peak unemployment rate of close to 15% in 2010. The city's unemployment rate generally aligns with California and San Bernardino County rates. Employed residents of Fontana work predominantly in several industry sectors: education, health care and social assistance (19%); transportation/warehousing and wholesale trade (20%); retail trade (14%); manufacturing (13%). These sectors can have both higher- and

[17] *Ibid.*

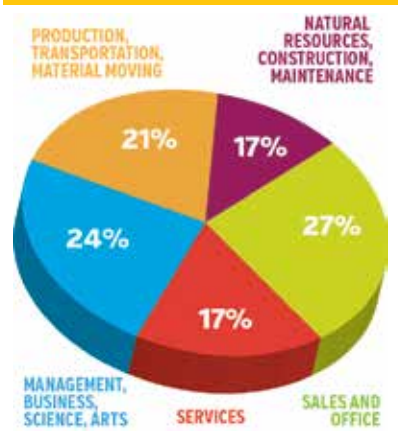
lower-paying occupations (health care, for example, includes highly paid physicians as well as hospital orderlies), but the last three tend to have lower median incomes overall. As noted earlier, the educational achievement of adults over 25 who live in Fontana shows a high percentage without a high school diploma (27%) and a relatively low percentage with bachelor's degrees or above (17.6%). Over the next 20 years, a high school diploma will increasingly be required even for insecure, lower-wage jobs. With increases in educational attainment, more Fontana residents will be able to earn more over their careers and avoid unemployment.

EXHIBIT 27 **JOB SECTORS OF FONTANA RESIDENTS**



Source: US Census ACS 2009-2013

EXHIBIT 28 **OCCUPATIONS OF FONTANA RESIDENTS**



Source: US Census ACS 2009-2013

EXHIBIT 29 **MEDIAN ANNUAL PAY BY SELECT OCCUPATION TYPES IN THE INLAND EMPIRE, 1ST QUARTER, 2015**

Management occupations	$105,270
Healthcare practitioners and technical	$83,713
Architecture and engineering	$81,077
Education, training and library	$59,013
Office and administration support	$53,542
Construction and extraction	$51,145
Community and social services	$50,901
Installation, maintenance, repair	$47,399
Sales and related	$35,668
Transportation and material moving	$34,590
Production	$33,537
Healthcare support	$31,749
Building, grounds and maintenance	$27,242
Personal care and service	$25,240
Food preparation and serving	$22,511

Source: California Employment Development Department, Median Pay Level by Sector, Inland Empire, First Quarter 2015

Fontana residents work all over Southern California. While about 10% work in Fontana and nearly 16% work in Ontario or Rancho Cucamonga, more than 8% work in the City of Los Angeles. The remaining 65% work in scattered locations across the metropolitan area and beyond.



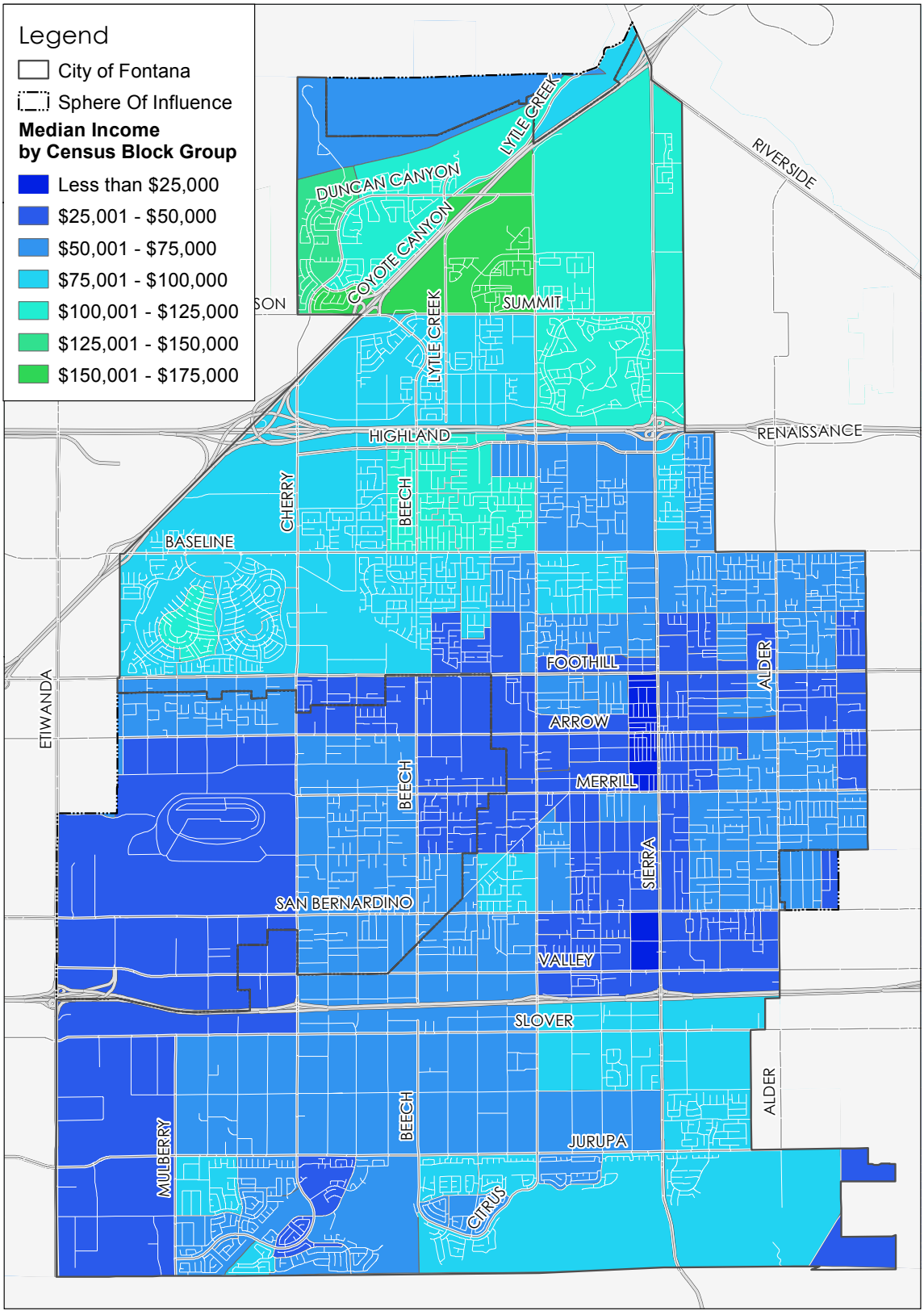
EXHIBIT 30 **TOP TEN PLACES WHERE FONTANA RESIDENTS COMMUTE TO WORK**

Jurisdiction	*Number of Commuters*	*% Total Commuters*
1. Fontana	5,809	9.94%
2. Ontario	5,176	8.86%
3. Los Angeles	5,018	8.59%
4. San Bernardino	4,169	7.14%
5. Rancho Cucamonga	4,102	7.02%
6. Riverside	2,810	4.81%
7. Pomona	1,411	2.41%
8. Upland	1,256	2.15%
9. Rialto	1,180	2.02%
10.Chino	1,103	1.89%
All other destinations	26,395	45.17%

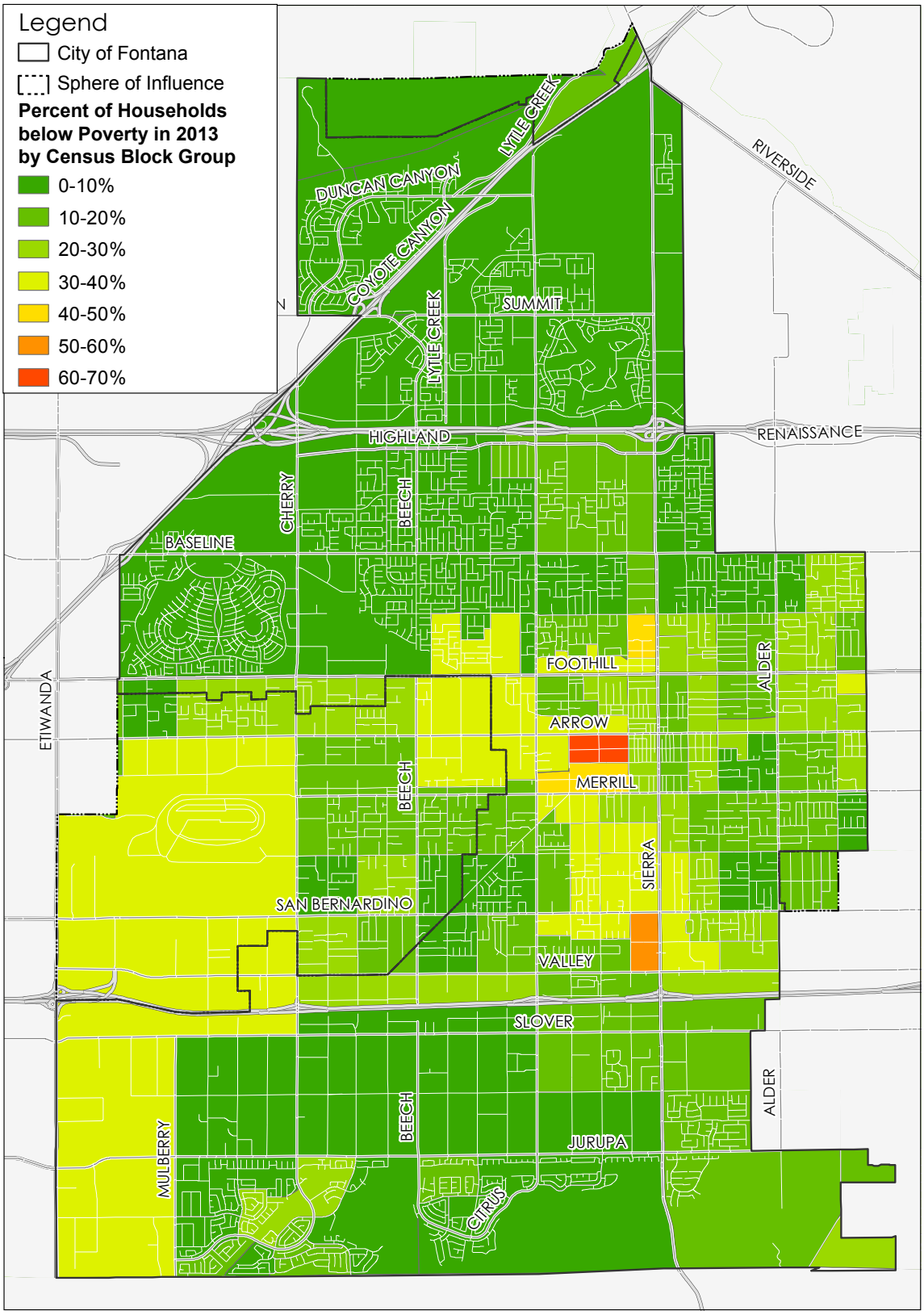
Sources: Sources: U.S. Census Bureau, 2014, LODES Data; Longitudninal-Employer Household Dynamics Program, 2011

Retail

The City of Fontana has a generally well-balanced retail gap that shows a small surplus of retail sales. Fontana's total retail sales amount of $1,575,513,436 is slightly higher than the estimated retail potential of $1,565,252,356, a $10,261,080 or 0.3% retail surplus. This means that there is more supply than there is demand within the city and people from outside the city are making purchases in these categories. The surplus is in the categories of motor vehicles and parts dealers (14.3% surplus), automobile dealers (13.1% surplus), and auto parts, accessories and tire stores (34.3% surplus). The city also has retail surpluses in the building materials (4.4%), health and personal care stores (10.5%), gasoline stations (18.4%), general merchandise stores (11%) and food services (4.4%) sectors . Retail "leakage," which means that Fontana residents have to go outside the city to satisfy their demand, is in the categories of electronics and appliances (65.4% leakage), furniture and home furnishings (56.3%), clothing and clothing accessories (27.8%) and clothing stores (24.5%).



Median Income
Octpber 2015
Data source: US Census 2013 ACS Estimate



Poverty
October 2015
Data source: US Census 2013 ACS Estimate

Fontana Forward

0 2,500 5,000 10,000
Scale 1:75,000 Feet

Industry

Fontana is experiencing high demand for logistics and warehousing space, but these industries typically produce few jobs. Fontana has 54,250,700 square feet of industrial space. The market for such space remains strong, and there are lower vacancy rates in Fontana than in other cities in the Inland Empire. Average rents for industrial space in Fontana are above average in the Inland Empire.

Most Fontana jobs in industry do not require higher education, though the Fontana Commerce Center does have a few technology businesses with better jobs. There are three industrial parks in South Fontana with logistics industry establishments and small manufacturing. Chaffey College has a program with California Steel Industries (smaller successor to Kaiser Steel) for welding certification.

Economic development activities

The economic development goals in the 2003 General Plan were:

- Fiscally healthy balance of land uses
- Improved and diversified industrial base
- Revitalized downtown
- Strengthened workforce
- Optimal mix of retail and services
- Economic development strategic planning

The City's main goal for economic development continues to be sales tax revenue, but the recession affected other economic development efforts. Accomplishments since the 2003 General Plan include establishment of a stable fiscal condition with a healthy reserve fund, development of a major industrial park for the logistics industry, and establishment of an Auto Center and chain retail in the SR-210 corridor. A restaurant study was initiated in July 2015.

Since 2006, arts and culture programs and services have played an important role in downtown revitalization. In addition to public improvements such as the library and auditorium, and the rehabilitation of the Center Stage Theatre, the City hired a staff person with an arts background, acquired the Art Depot, and began offering fine arts programs and services. Successful downtown revitalization will require a critical mass of new housing opportunities.

6. COMMUUNITY SYSTEMS

A. Mobility And Connectivity

An excellent transportation system provides an efficient and effective balance between access and mobility. The overall goal of transportation is access: we travel to reach destinations and the opportunities that those destinations represent. Transportation is accomplished through mobility: our physical movement through space. We often hear about the importance of integrating transportation decisions and investments with land use choices. This means that transportation systems should serve land use choices—not the reverse. In making transportation decisions, it is important to weigh potential conflicts and trade-offs according to the specific community goals for a particular area. If we always opt for increased auto-travel mobility—that is, higher speeds and shorter travel times—land use access needs to be reduced, as in a limited-access interstate highway. Enhanced auto travel tends to reduce other types of access, while enhanced nonmotorized travel and public transit sometimes can result in less speed for auto travel.

The modern Inland Empire was built for the car. Like many other Inland Empire communities, Fontana is particularly dependent on its regional transportation systems, both because so many residents commute to jobs outside of the city and because its major economic sector, logistics, is by definition linked to freight traffic, both truck and rail. The expansion of the freeway system over the last 50 years fueled the growth of Southern California, filling in the spaces between older cities with auto-dependent suburban communities. I-10 reached San Bernardino in the 1950s, most of I-15 was built in the 1970s, and SR-210, built as relief for I-10, includes a section from Etiwanda Avenue to Sierra Avenue completed in 2001. When containerization and limited warehouse space at the Ports of Los Angeles and Long Beach resulted in the need for warehouse space on low-cost land, Inland Empire cities like Fontana, with access to I-10 and railroads, attracted the logistics industry.

The car-centric culture that seemed the epitome of freedom to move around the region in the early decades of suburbanization also brought increasing air pollution. With population and residential growth, traffic congestion became a chronic problem. Fontana now has bus and commuter rail options, and bus rapid transit (BRT) routes are planned, and these newer modes of transportation are likely to help reduce the growth in traffic somewhat. Moreover, a recent study for the California Department of Transportation (Caltrans) showed that widening of roads often does not ease traffic congestion, as many believe. This is because of the phenomenon of "induced demand"—more roads mean more traffic over both the short and the long term because the extra capacity attracts new trips. [18] At the same time, the dispersed residential and employment patterns characteristic of the Inland Empire and Southern California in general will continue to require transportation modes that accommodate this reality.

[18] www.citylab.com/commute/2015/11/californias-dot-admits-that-more-roads-mean-more-traffic/415245/

Innovations now in the early stages of development, such as self-driving vehicles (both passenger cars and trucks) to make traffic more efficient as well as safer, may provide solutions to increasing traffic congestion in the future.

State and federal transportation policy is now based on concepts of integrating land use and transportation to provide multimodal systems. Roadway level of service (LOS), a grading scale assigned to roadways based on congestion levels, is no longer the sole force behind transportation funding decisions. The federal Departments of Transportation, Housing and Urban Development, and the Environmental Protection Agency have together adopted six Livability Principles to guide planning and implementation:

- Provide more transportation choices.
- Promote equitable, affordable housing.
- Enhance economic competitiveness.
- Support existing communities.
- Coordinate policies and leverage investment.
- Value communities and neighborhoods.

Transportation policy and planning in California is also guided by these Livability Principles, because federal funding is often a significant resource for transportation improvements, and by state law. The State of California has established policies for all communities in the state. SB 375 is a land use and environmental law intended to reduce greenhouse gas production. It calls for the integration of land use, housing, and transportation. Transportation planning agencies are required to develop a Sustainable Communities Strategy to integrate transportation, land use, housing, and environmental plans in order to reduce greenhouse gas (GHG) emissions. The transportation guidelines in SB375 and in SB226, which are intended to promote infill development, focus on development of multimodal transportation networks and diversification of land uses, as well as reduction of GHG emissions. SB743, which goes into effect in 2017, requires that the primary metric for improving the transportation system be vehicle miles traveled (VMT), rather than vehicle level of service (LOS), the previous metric, which focuses only on speed and congestion levels for vehicles.

☞ *Findings*

- **Fontana is a major transportation hub with convenient access to Interstates 10, 15 and SR-210, two east-west freight rail lines, and one commuter rail line.**
- **Within Fontana, I-10 carries 200,000 average daily trips (ADT).**
- **SANBAG is planning high-occupancy toll (HOT) lanes on I-10 between Los Angeles County and Redlands and on I-15 between Riverside County and the Victor Valley.**
- **Sierra Avenue is the most heavily traveled street in Fontana. Immediately north of I-10 it carries an average of 51,500 per day, rapidly declining to 30,000 with distance from I-10.**
- **The City maintains 497 miles of streets and has a computerized pavement-management system to set priorities for maintenance and improvements.**
- **Fontana is served by Omnitrans with 10 bus routes and the Victor Valley Transit Authority, which provides commuter bus service to Barstow and Victorville.**
- **Omnitrans has proposed a bus rapid transit route along Sierra Avenue and Foothill Boulevard.**
- **Metrolink provides passenger rail service to Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura counties from downtown, with weekend service and 38 weekday trains serving an average of 372 riders per weekday, as of late 2015.**
- **Fontana's bicycle network expanded in recent years, especially with the Pacific Electric Trail linking to other Inland Empire communities.**
- **According to Walk Score, Fontana is very car-dependent. Downtown is the most walkable area, with the Morningside and Summit Heights neighborhoods being more walkable than other parts of the city.**
- **Approximately 42% of Fontana's working population travels 25 miles or more to work, and 14% travels more than 50 miles to work.**
- **Average daily vehicle miles traveled is among the highest in the county (115.3 miles per day, ranking Fontana fourth among 24 cities in the county).**

Transportation Planning for Fontana

Transportation planning for Fontana involves several agencies with a variety of implementation responsibilities. The federally mandated metropolitan planning organization (MPO) is the Southern California Association of Governments (SCAG), which covers six counties, including San Bernardino County. SCAG also prepares the state-mandated Sustainable Communities Strategy (SCS). The current long-range transportation plan is the "SCAG Regional Transportation Plan 2012-2035 Sustainable Communities Strategy: Towards a Sustainable Future."

The San Bernardino Associated Governments (SANBAG) serves as the San Bernardino County Transportation Commission. SANBAG's role is to enhance planning and implementation within the county of the SCAG Regional Transportation Plan. SANBAG is responsible for planning and implementing a multimodal transportation system for the county's 2.1 million residents through support for freeway construction, regional and

local road improvements, public transit (rail and bus), ride-sharing programs, congestion management, and planning studies. SANBAG is also responsible for planning projects funded by voter-approved local sales tax measures. The City of Fontana manages local streets and traffic signals, and pedestrian facilities. It also helps develop projects for funding through SANBAG and SCAG.

The main transportation goals of the 2003 General Plan were:
- Improve transportation including highway interchanges
- Create regional links to trails
- Establish bus rapid transit (BRT)
- Establish a truck route plan
- Improve railroad crossings

Major accomplishments include the construction of three new highway interchanges and improvement of existing overpasses; construction of the Pacific Electric Trail as part of a 22-mile regional trail; a grant for an Active Transportation Plan; a Safe Routes to Schools grant; and progress through SANBAG on a preferred option for a Rapid Bus system (sometimes called "BRT light") on Sierra Avenue and Foothill Boulevards.

Existing roadway system

Roadway Classifications

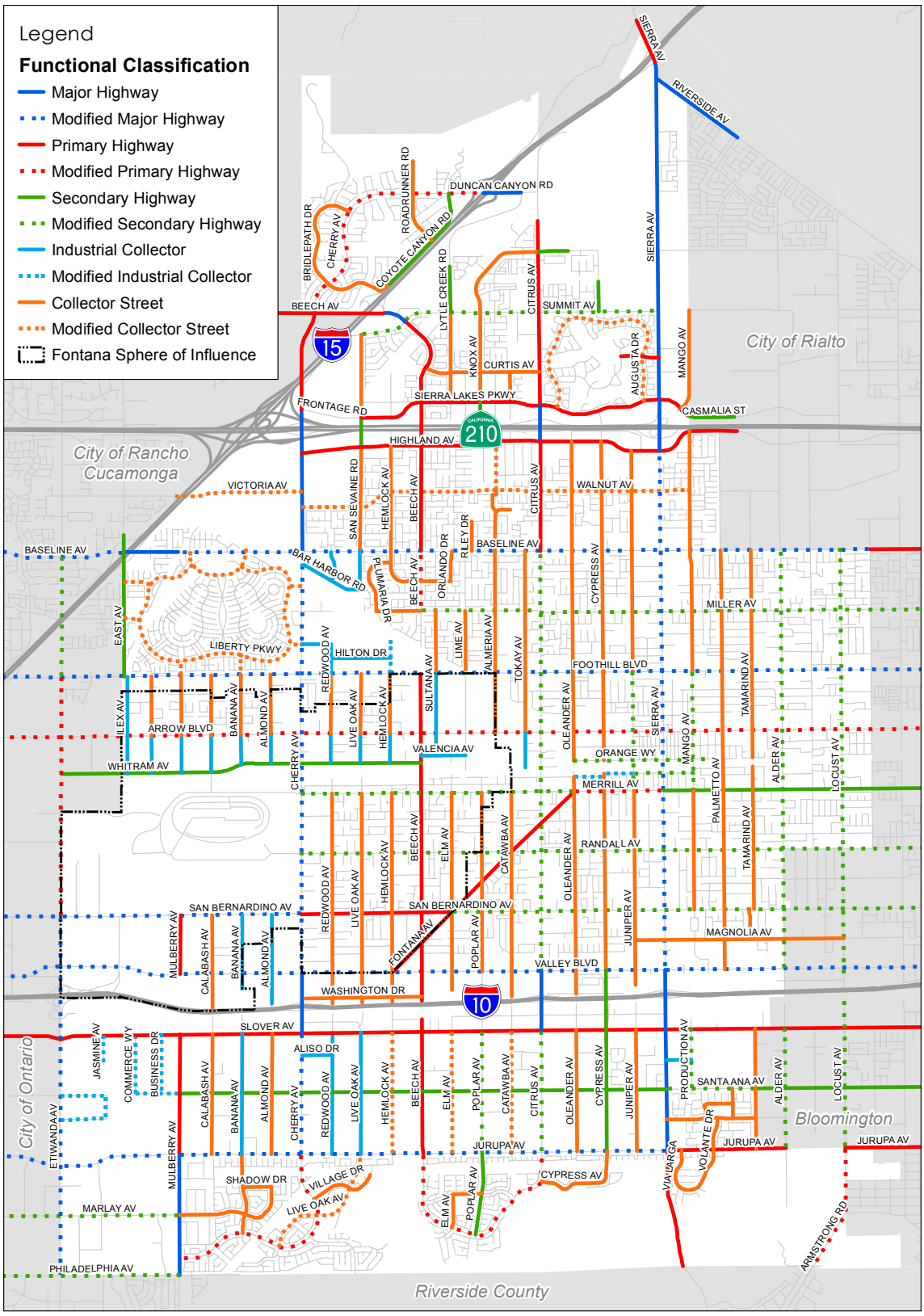
Roads are grouped according to the type of service they provide. A balance of all road types is needed to achieve mobility for all users. The classification of roadways is described by size and function, and has specific physical dimensions, particularly with respect to the number of lanes. The existing roadway classification system in Fontana is illustrated in the Roadway Functional Classifications map on the next page.

Truck Routes

Significant truck travel exists within the city due to the many industrial facilities in Fontana and neighboring communities. The Truck Network maps shows the truck routes throughout the city. Industrial facility locations cause higher than average volumes of trucks to mix with local traffic. High percentages of truck trips originate from the I-10, I-15, and SR-210 freeways within the city limits and SR-60 just outside the city's boundaries, as well as some arterials connecting nearby populations. The freeway interchanges specifically along the I-10 freeway experience heavy truck volumes.

Bike Facilities

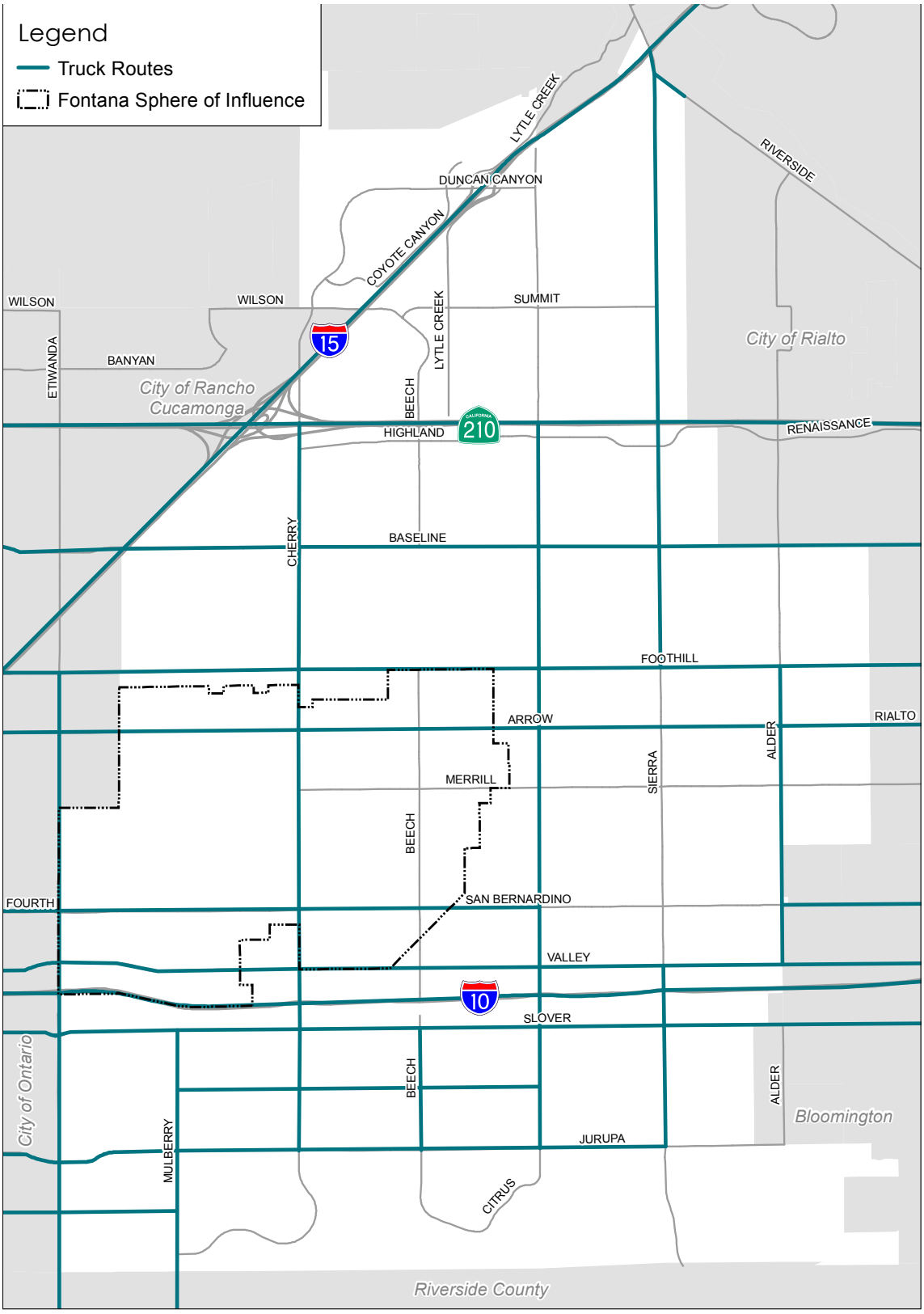
Fontana's bicycle network has expanded significantly over recent years. The Mobility map on page 82 illustrates existing and proposed bike facilities in the City of Fontana. Detailed descriptions of proposed improvements to existing facilities, recommended programs, and cost estimates for construction of bike infrastructure can be found in the 2011 San Bernardino County Non-Motorized Transportation Plan (last updated in May 2015). Fontana was awarded a $1.6 million Safe Routes to School grant to install 2.2. miles of sidewalk and bicycle infrastructure to benefit over 20 schools.



Roadway Functional Classifications
August 2015
Data source: City of Fontana, 2014

Fontana Forward

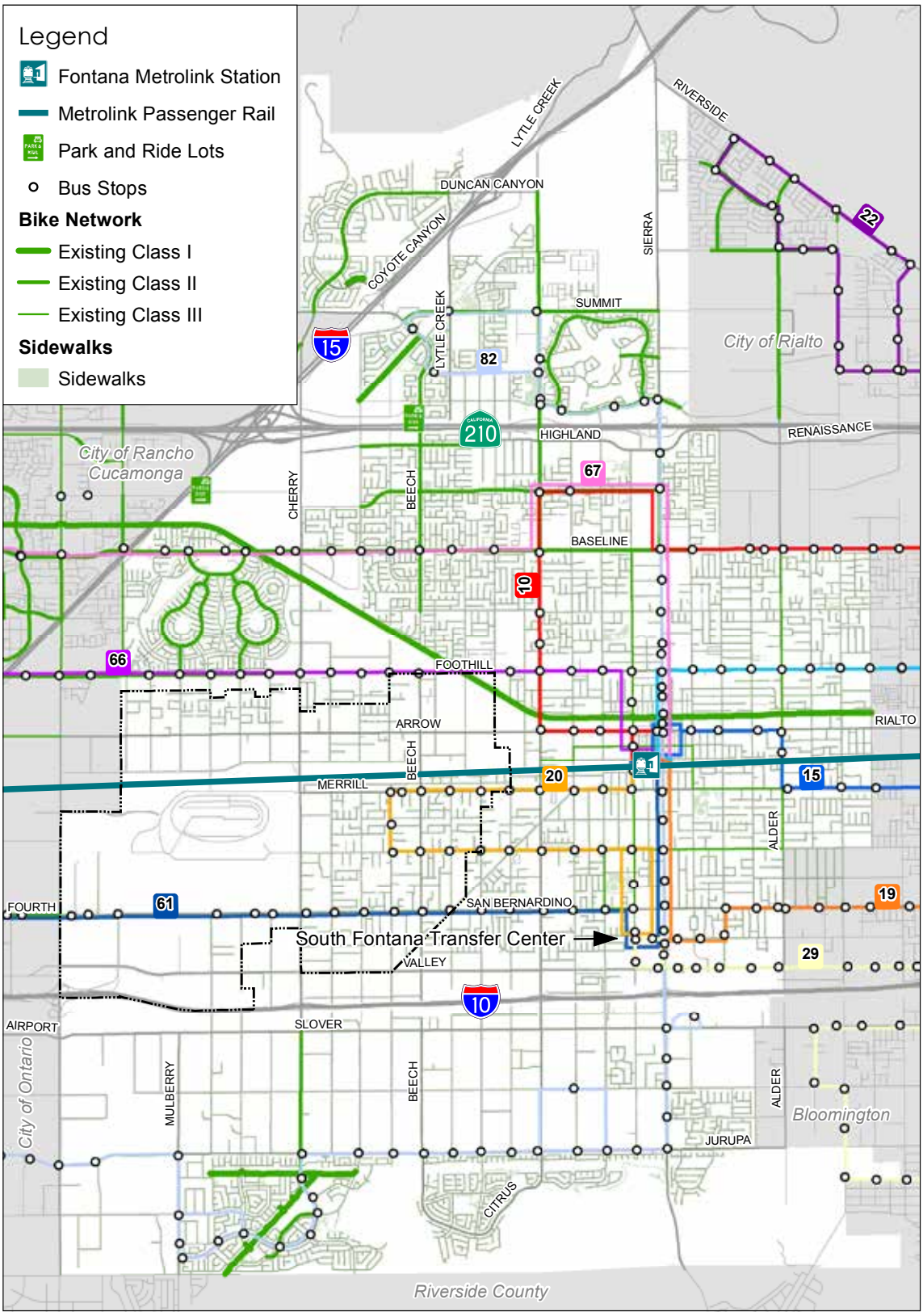
0 2,500 5,000 10,000
Scale 1:75,000 Feet



Trucking Network
August, 2015
Data source: City of Fontana, 2014

Fontana Forward

0 2,500 5,000 10,000
Scale 1:75,000 Feet



Mobility
October, 2015
Data source: City of Fontana, Metrolink, Omintrans, SANBAG

Fontana Forward

0 2,500 5,000 10,000
Scale 1:75,000 Feet

Sidewalk Connectivity and Walkability

As the Sidewalk Connectivity map shows, the majority of streets in the city have sidewalks. Walkability in Fontana varies in different parts of the city. For example, the mix and concentration of uses, transit, and public facilities in downtown Fontana provides access to more transportation modes compared to newer subdivisions along the edges of the city where services are less concentrated. WalkScore.com provides a metric for walkability on 0-100 scale based on criteria such as population density, average block length, route directness, concentration of destinations such as schools, parks, retail, etc. Based on this metric, Fontana scores favorably in the downtown area, but is more car-dependent in planned communities. The city's overall Walk Score is 32 ("car-dependent, most errands require a car") but the Sierra Avenue/Downtown Fontana area Walk Score is 77 ("very walkable, most errands can be accomplished on foot").

Control Types

The majority of intersections in Fontana are either uncontrolled or controlled by stop signs due to their low traffic volumes. The intersection of Wheeler and Seville avenues, near City Hall, is unique in that it is controlled by a decorative roundabout. Intersections with higher traffic volumes are typically controlled with traffic signals.

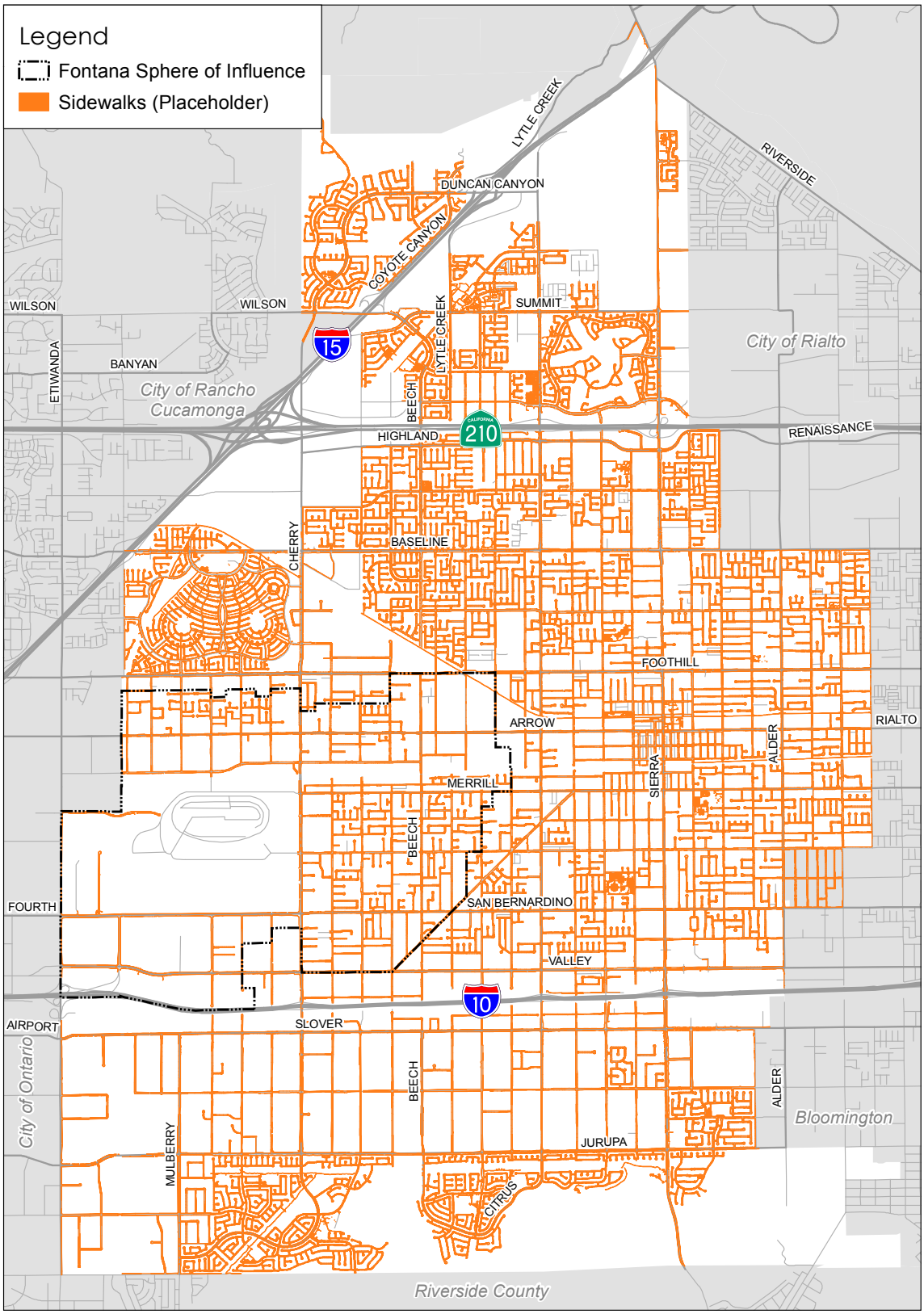
Daily Traffic Volumes (ADT)

Existing average daily traffic (ADT) volumes on the arterial highway plan are shown on the Average Daily Trips map. These traffic volumes are from Caltrans data published in 2015 and data from the City of Fontana. Freeway counts were recorded from 2008 to 2014 and local street counts were recorded between 2001 and 2011 (the majority of counts date from 2006 or 2007).

Since the traffic volumes were collected over several years, for consistency all volumes were factored to one existing baseline year. An annual growth rate of 2.1 percent per year from the count date to 2015 was applied to the traffic volumes to obtain baseline conditions. The City provided the annual growth rate. At some locations, missing local street volumes were estimated by factoring adjacent link volumes.

Fontana's traffic volumes range from 100 to 51,800 ADT, with the highest volumes occurring on major highways that carry traffic to and from the I-10, I-15, and SR-210 freeways. Sierra Avenue north of I-10 carries the most traffic of any single local roadway segment in the city at 51,800 ADT. Foothill Boulevard consistently carries over 35,000 ADT throughout the city limits, whereas Sierra Avenue traffic volumes quickly drop off to approximately 30,000 ADT as they travel north or south away from I-10.

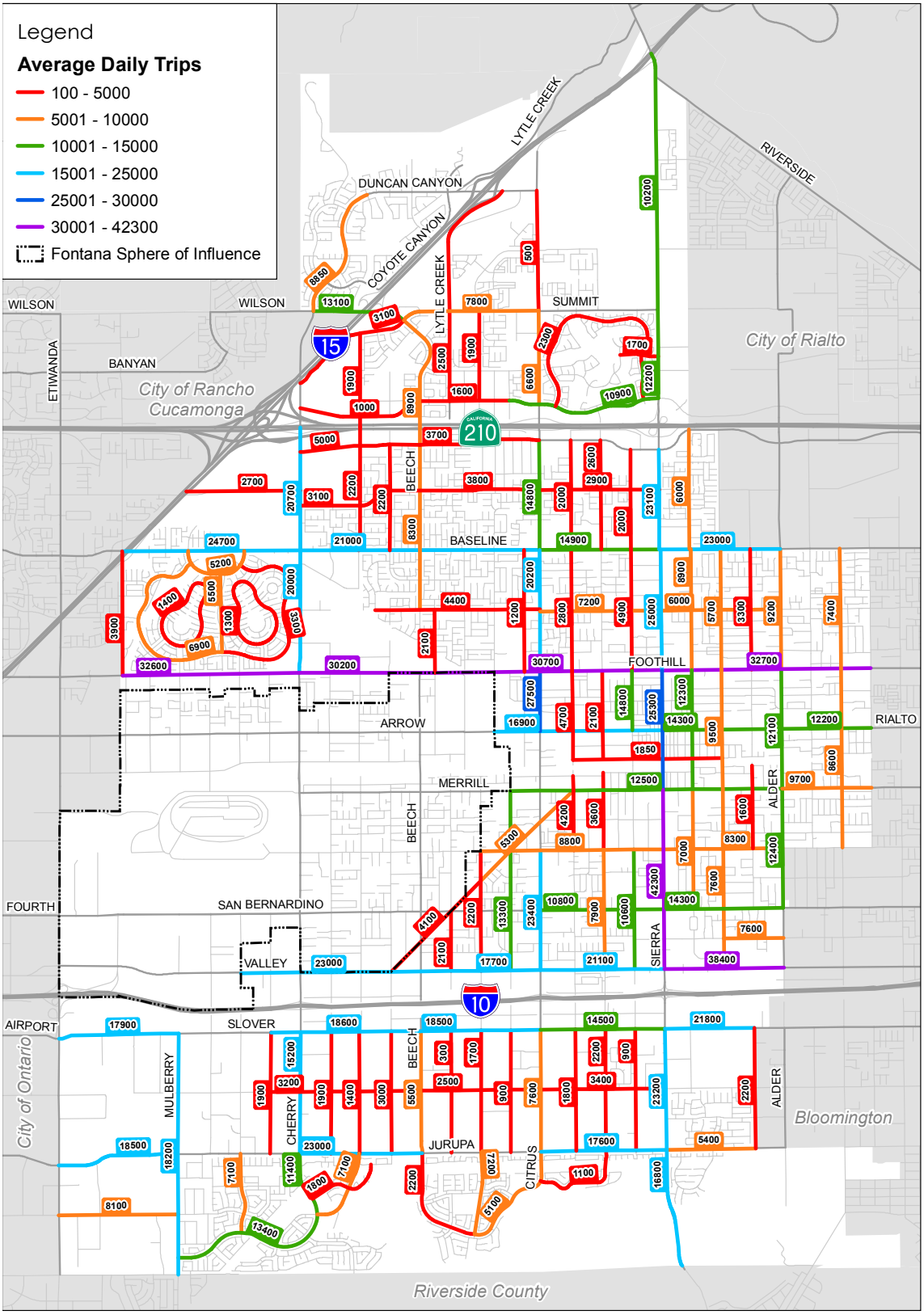
Freeway traffic volumes are highest on I-10, which carries over 200,000 ADT through the city and 250,000 ADT in the western portion of the city and the City of Ontario.



Sidewalk Connectivity
August, 2015
Data source: City of Fontana, 2015

Fontana Forward

0 2,500 5,000 10,000
Scale 1:75,000 Feet



Average Daily Trips
August, 2015
Data source: City of Fontana, 2015

Fontana Forward

0 2,500 5,000 10,000
Scale 1:75,000 Feet

Volume/Capacity Ratios

The baseline volumes, together with the daily capacity based on the roadway classification, were used to determine the volume/capacity (V/C) ratios for the city's arterial system. The Volume/Capacity Ratios map shows V/C ratios and resulting Level of Service (LOS) for the major, primary, and secondary highways and collector streets in Fontana.

Existing transit system

Bus Routes

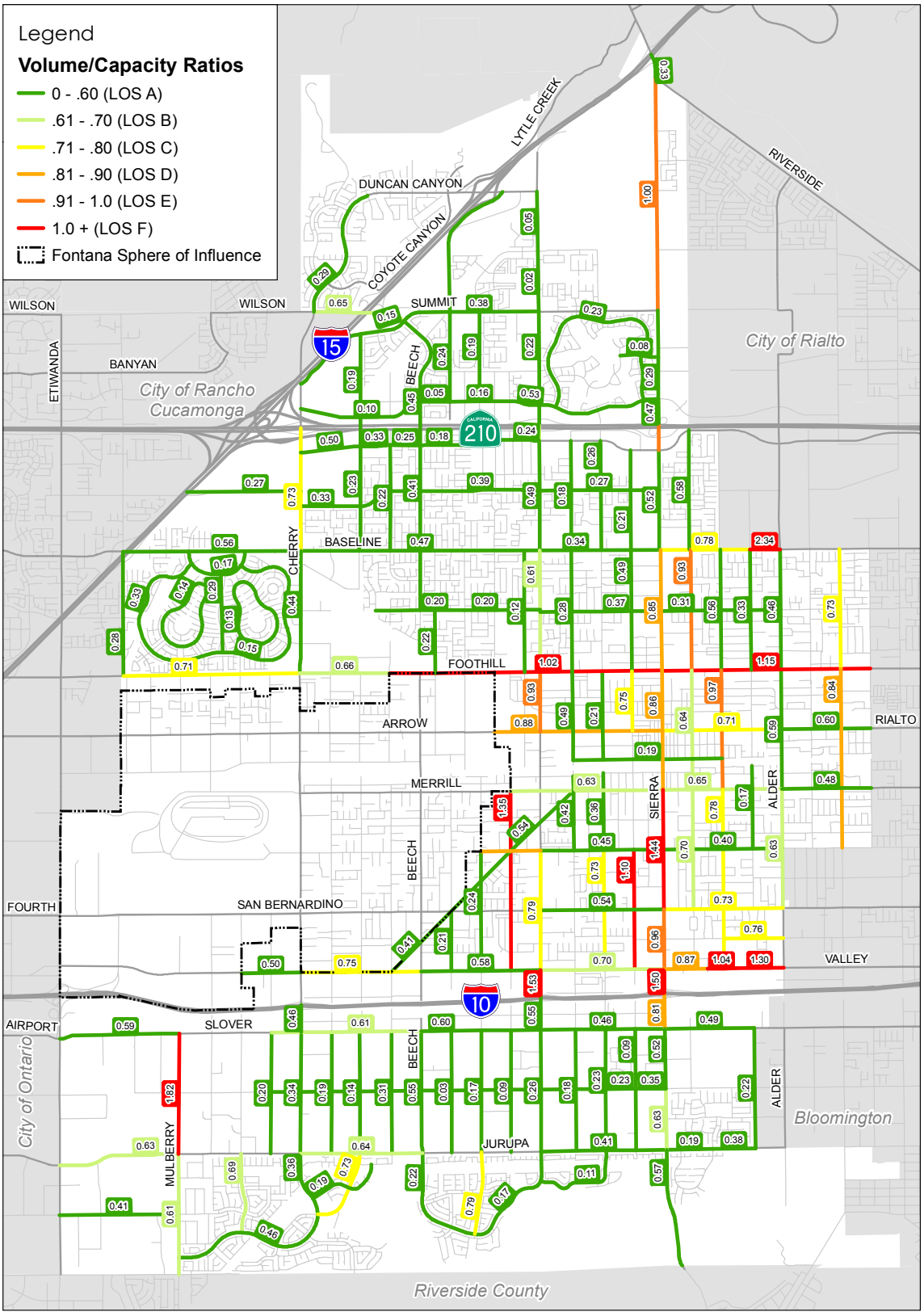
Fontana is served by both fixed-route transit services and demand-responsive paratransit services to meet the needs of riders with disabilities. Fixed-route bus services include bus lines that are operated primarily by Omnitrans, while demand-responsive services have defined service areas but do not operate based on fixed schedules or routes. Omnitrans currently operates 10 bus routes through the city, and adjusts the number of routes and lines periodically based on ridership patterns. Only one transit line (Omnitrans 82) extends to the north end of the city, limiting connectivity for people who live north of the 210 Freeway, and limiting access to commercial and recreational amenities by transit-dependent residents in South or Central Fontana. (See the Bus Routes map.) The Victor Valley Transit Authority (VVTA) also operates one bus route with stops in Fontana. Omnitrans operates the Access ADA Service which provides curb-to-curb service for those who are unable to use the fixed route service independently.

Park-and-Ride facilities

Two park-and-ride facilities are located in Fontana. The first is located at the Caltrans Transportation Management Center just east of I-15 on Victoria Street. A second is just north of SR-210 on Beech Avenue. Park-and-ride facility locations, as well as bus stops in and around the city, are shown on the Mobility map. The Fontana Metrolink Station Transfer Center (at the intersection of Sierra Avenue and Orange Way) and South Fontana Transfer Center (at the intersection of Sierra and Marygold avenues) provide transfer opportunities to multiple bus routes. The Fontana Metrolink Station Transfer Center also provides park-and-ride facilities and transfer access to the Metrolink regional commuter rail service.

West Valley Connector Bus Rapid Transit (BRT) project

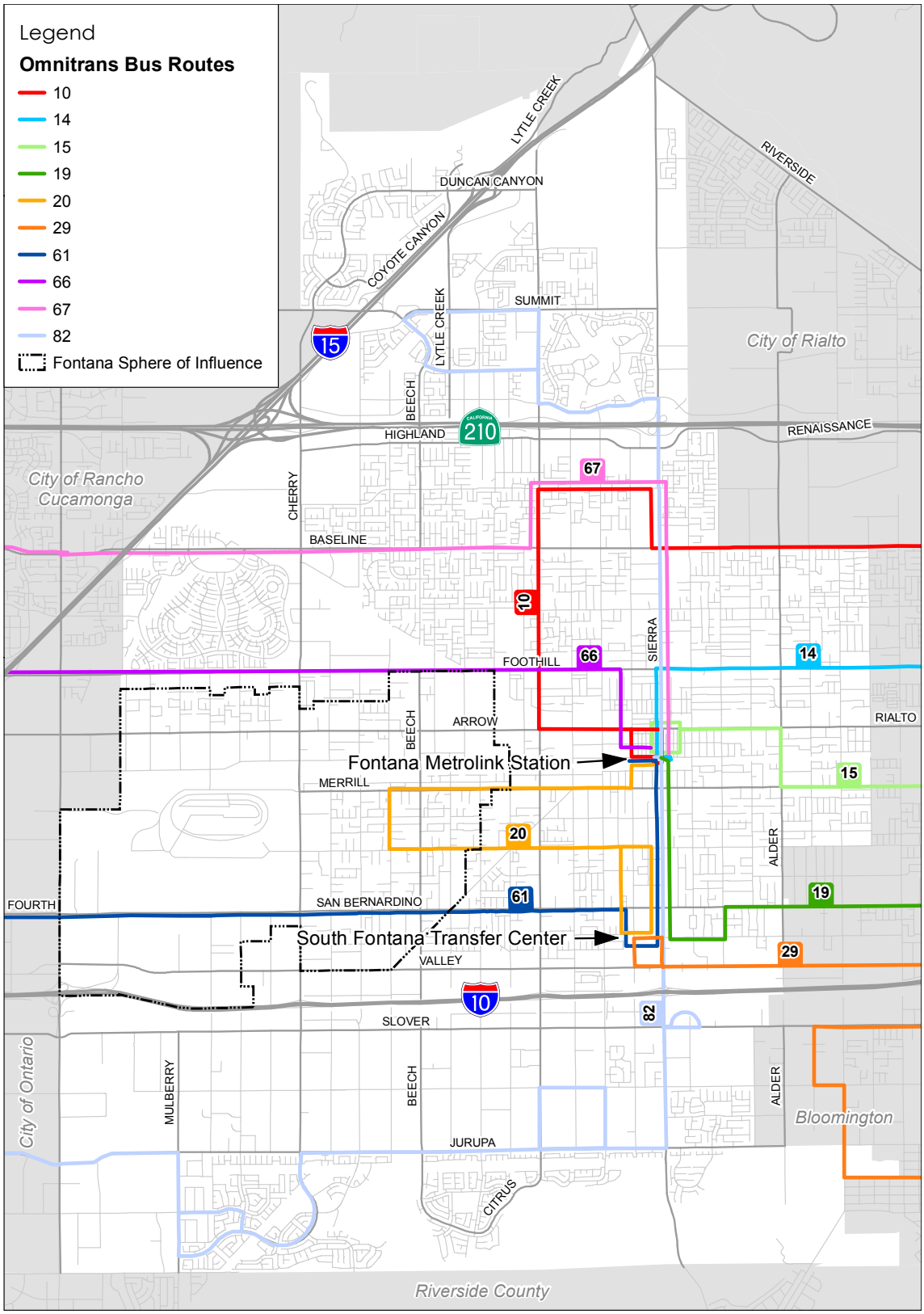
Omnitrans proposed a bus rapid transit (BRT) project to provide faster service from Fontana to Pomona. The "West Valley Connector Corridor Alternatives Analysis Report" recommended a "rapid bus service" system for this corridor, including 8.2 miles in Fontana starting at Kaiser



Volume/Capacity Ratios
September, 2015
Data source: City of Fontana, 2015; Caltrans, 2015

Fontana Forward

0 2,500 5,000 10,000
Scale 1:75,000 Feet



Bus Network
August, 2015
Data source: Omnitrans, 2015

Fontana Forward

0 2,500 5,000 10,000
Scale 1:75,000 Feet

EXHIBIT 31 **RECOMMENDED ROUTE OF THE WEST VALLEY BRT SERVICE**



Source: Omnitrans, "West Valley Connector Corridor Alternatives analysis Report"

Hospital on Sierra Avenue and turning west on Foothill Avenue. Rapid Service includes limited-stop service, enhanced stations, intelligent transportation system improvements, transit-signal priority, queue jump lanes, and specialized branding. It is sometimes called "BRT light" because it does not include exclusive lanes, offboard fare collection and other enhancements. The Fontana segment of the line would include four stops on Foothill Blvd at Mulberry, Cherry, Citrus, and Sierra avenues; and three stops on Sierra Avenue at the Metrolink Station, Randall Avenue, and Kaiser Hospital.

Passenger Rail

Commuter rail service in Fontana is provided by the Southern California Regional Rail Authority's (SCRRA) regional "Metrolink" service which provides passenger rail service to Los Angeles, Orange, Riverside, San Bernardino, San Diego (Oceanside only) and Ventura Counties. The San Bernardino Line traverses east to west through the city along a former Santa Fe Railroad line, now operated by the Burlington Northern Santa Fe (BNSF) railroad. A Metrolink rail station is located downtown. Metrolink service along the 56.2 mile, 13-station San Bernardino line operates seven days a week with 38 trains a day during the week, 20 on Saturdays, and 14 on Sundays. The nearest station with access to longer-distance Amtrak service is Santa Fe Depot in the City San Bernardino to the east. Amtrak trains operate on the Union Pacific (UP) Railroad south of I-10.

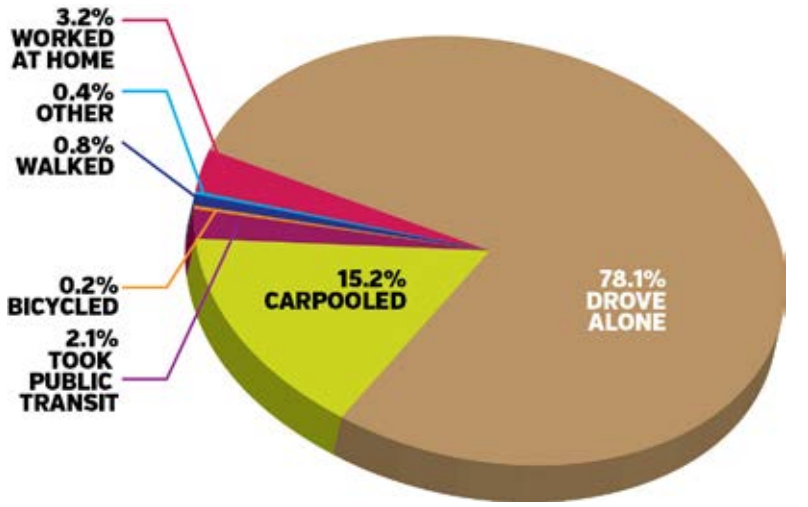
Transit Ridership

Despite a number of bus routes and regional commuter rail access, Fontana remains largely auto-dependent. The Fontana Metrolink Station is one of the busiest on the route, but averaged 372 weekday boardings in 2014 (down 10.6% from 2013) contributing to the average of 11,036 weekday riders on the Metrolink San Bernardino line. Omnitrans bus ridership was also down 2.8% system-wide in 2014. Metrolink experienced system wide declines in ridership during the recession, saw increases in 2013 and then declined again. The dispersed nature of employment in Southern California affects the potential success of Metrolink. While there has been residential growth in downtown LA, it is not growing as an employment center as of late 2015.

Commuter Travel

The Southern California Association of Governments (SCAG) estimates that 78 percent of Fontana residents commute by car (single occupant), 17 percent carpool, and only 2 percent commute by transit, with another 4

EXHIBIT 32 **COMMUTING CHOICES OF FONTANA RESIDENTS**



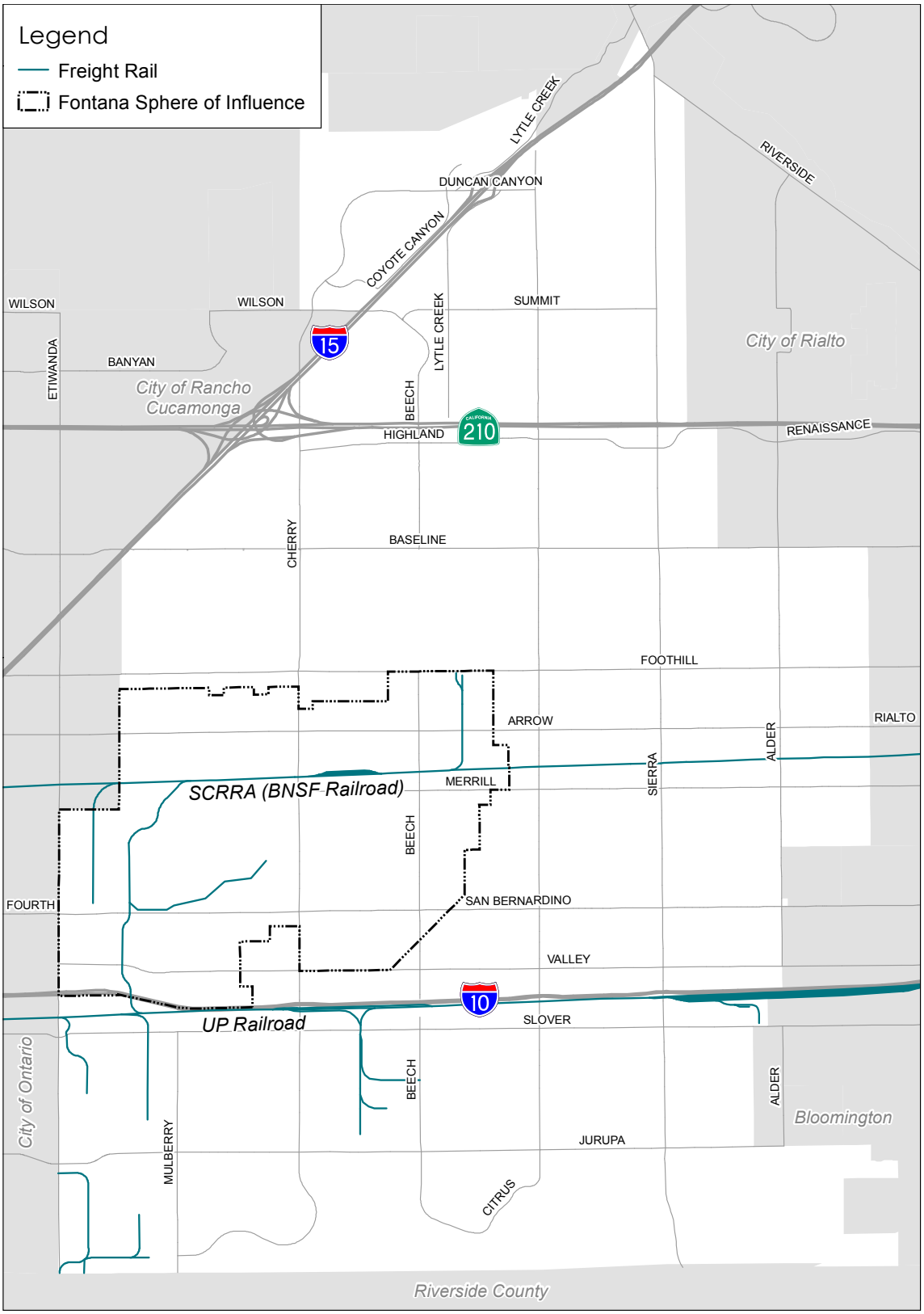
Source: U.S. Census, ACS estimates (2009-2013)

percent walking, biking, or working from home. Data from the US Census Bureau American Community Survey (2009-2013) largely mirrors SCAG data. As might be expected from the dispersed employment locations of Fontana residents, the city is among the top 20 cities for commuting origins within the six-county Southern California region.[19] With the vast majority of residents commuting by car to destinations outside of the city, the average commute time for Fontana residents is 35 minutes.

Freight Rail

Both the Union Pacific (UP) and Burlington Northern Santa Fe (BNSF) railroads run freight rail service through Fontana. Both railroads travel east to west across the city, though the UP main line is entirely grade separated (due to its location adjacent the I-10 freeway) while the BNSF tracks have multiple grade crossings. Existing industrial uses in the city are clustered in areas served by existing spur railroads. As new industrial development continues, it is desirable that industrial developments continue to have access to these spurs whenever possible. Rail traffic on the UP main line through the city is expected to continue to increase with ex-

[19] www.trbcensus.com/TRB2015/Vo_Flow_poster_TRB2015.pdf



Freight Rail Network
August, 2015
Data source: SANBAG (edited), 2015

Fontana Forward

0 2,500 5,000 10,000
Scale 1:75,000 Feet

panding international trade at the ports of Long Beach and Los Angeles as well as regional growth in Southern California. While BNSF traffic is also expected to increase, the bulk of the growth is expected to be carried by the BNSF main line, which travels through Riverside County crossing the UP line in Colton. The UP and BNSF lines that travel through the City of Fontana, as well as the spur railroads that provide access to local industry, are shown in the Freight Rail Network map on the previous page.

B. Infrastructure Systems And Utilities

A city's infrastructure systems—water, sewer, and other utilities—are often taken for granted as long as they function well, often out of sight below the surface. How these systems operate and the resources they use are essential issues in the survival and growth of modern cities. California's ongoing severe drought since 2011 is the most significant new infrastructure condition to emerge since Fontana's 2003 General Plan. The state's water supplies include surface waters and groundwater in aquifers and Fontana receives water from both kinds of sources. The surface water system is highly organized and regulated, providing up to 70% of the state's water supply in normal years. In drought years, however, groundwater supplies account for up to 60% of water supply, and groundwater extraction in California has historically been subject to less regulation than in any other state, with limited information on how much water is being withdrawn, especially in agricultural areas. New legislation will come into force in 2016 giving local agencies regulatory powers and directing the creation of groundwater sustainability plans. In Fontana, however, groundwater supplies are already included in regional plans to conserve and recharge aquifers.

The Inland Empire Utilities Agency, (IEUA), which provides some services to Fontana, is an innovative regional agency that has invested in sustainable, resource efficient, and cost-efficient infrastructure, equipment and programs. It provides non-potable recycled water to nonresidential users throughout the region and has developed systems to recharge groundwater. IEUA focuses on reducing energy costs in the "Water-Energy Nexus." According to the California Energy Commission, the transportation and treatment of water, treatment and disposal of wastewater, and the energy used to heat and consume water account for nearly 20% of the total electricity and 30% of non-power-plant-related natural gas consumed in California. IEUA has the largest fuel cell system powered by renewable biogas in the world. The IEUA's headquarters is a LEED certified building and adjacent to the building the IEUA has created an educational wetlands park.

☞ *Findings*

- **The City of Fontana does not directly control its drinking-water supply.**
- **Water is provided to the city primarily by three agencies: The Fontana Water Company (FWC), Cucamonga County Water District (CVWD) and the West San Bernardino County Water District (WSBCWD).**
- **Water in Fontana comes from Lytle Creek, groundwater wells, and the State Water Project (Northern California water).**
- **Because of long-term drought conditions, Fontana is under water-conservation regulations.**
- **Wastewater treatment services are provided by the Inland Empire Utilities Agency (IEUA), which also delivers recycled water for non-potable uses. The City owns Fontana's sanitary sewer system of over 250 miles of sewer lines and six sewage pump stations.**
- **Fontana contracts out solid waste disposal and curbside recycling. Solid waste goes to the Mid-Valley Landfill located in Rialto at the Fontana border.**
- **Over 50% of solid waste is recycled. State legislation requires that 75% percent of solid waste generated be reduced at the source, recycled, or composted by the year 2020.**
- **Southern California Edison provides electricity to Fontana. On Earth Day, 2015, Fontana introduced the state's first zero net energy residential community, consisting of 20 homes.**

Water Supply and Drought

Southern California is one six-county region when it comes to water. The Metropolitan Water District (MWD) imports about half of the region's overall supply from the Colorado River and Northern California and holds water in storage in case of drought. When MWD must limit supplies during an extraordinary drought cycle, local mandatory conservation becomes the norm. The district created a Water Supply Allocation Plan to approach drought in a regional and fair manner designed to minimize impacts. The governor called for a 25% reduction in urban water use starting in June 2015, which California communities have been meeting and exceeding.

The State Water Board has imposed the following water-use restrictions for everyone:

- No runoff allowed onto driveways, sidewalks, etc. when irrigating landscapes with potable water.
- Hoses must have an automatic shutoff nozzle to wash cars and other vehicles.
- Residents must not use potable water to wash down driveways and sidewalks.
- Residents must not use potable water in decorative fountains that do not recirculate.
- No outdoor watering during and within 48 hours following measurable rainfall.
- Restaurants are not to serve water to customers unless the customer requests it.
- Hotels/motels must ask guests to re-use towels and linens.

- Homeowners must fix leaks within 72 hours after being notified.
- Potable water cannot be used to irrigate ornamental turf on public street medians.
- Potable water cannot be used for outside landscapes of new homes and buildings unless the irrigation system complies with outdoor irrigation efficiency standards adopted by the State's Building Standards Commission.

Drinking water supply

Water is provided to Fontana and its sphere of influence primarily by three agencies: The Fontana Water Company (FWC), Cucamonga Valley Water District (CVWD) and the West San Bernardino County Water District (WSBCWD). Two other water agencies, the Crawford Canyon Water District, and the Marygold Mutual Water Company, provide water for small portions of the northern and eastern parts of Fontana. These agencies draw on both local sources and water imported from Northern California. Imported water serves Fontana through two regional water wholesalers, the Inland Empire Utilities Agency (IEUA) and the San Bernardino Valley Municipal Water District (Valley District).

- FWC serves the vast majority of the city, covering approximately 52 square miles with 38 wells, 17 storage reservoirs, and 3.5 million feet of water-distribution mains ranging up to 36-inches in diameter. The water supply is produced from Lytle Creek surface flow, and from wells in the Lytle Basin, Rialto Basin, Chino Basin, and another groundwater basin known as "No Man's Land." A portion of the water supply is purchased from Cucamonga Valley Water District. Water from the State Water Project is purchased from the Inland Empire Utilities Agency and San Bernardino Valley Municipal Water District. The State Water Project, also known as the California Aqueduct, transports water 600 miles from Northern California in the Sacramento-San Joaqin Delta to the southern portion of the state. It is owned and operated by the State of California and is the longest aqueduct system in the world, featuring 23 dams and reservoirs, 22 pumping plants that lift water to heights of 3,500 feet, and six power plants. The aqueduct comprises 473 miles of canals, 175 miles of pipeline and 20 miles of tunnels.
- Cucamonga Valley Water District (CVWD) serves the northwest portion of Fontana adjacent to the City of Rancho Cucamonga. CVWD's drinking water comes from two primary sources: 20 local groundwater wells in the Chino Groundwater Basin and the Cucamonga Basin and imported water. A small amount of water also flows from local canyons and tunnels.
- The former West San Bernardino County Water District. now the West Valley Water District (WVWD), services the northeast portion of the City of Fontana and the northern Fontana Sphere of Influence as well as other cities and unincorporated areas.
- The Crawford Canyon Mutual Water Company services a small portion of undeveloped land at the northern Fontana Sphere of Influence boundary. The company has 12 miles of pipelines and currently only serves agricultural water and backup water for fire.
- The Marygold Mutual Water Company services a small portion of the western City of Fontana boundary and the unincorporated area of Bloomington (Marygold Acres). There is a small overlap of services with the Fontana Water Company.

Groundwater recharge

Groundwater depends on recharging the aquifer with water that seeps into the ground from rain and snowmelt. The impervious surfaces that come with development, such as roofs, streets, and parking lots, can keep water from reaching the aquifer. Artificial groundwater recharge is increasingly used where natural sources are insufficient. Fontana's groundwater supplies come from the Chino Basin, which encompasses 235 square miles, 80% of which is in San Bernardino County. Several agencies, including the IEUA, sponsor the Chino Basin Recycled Water Groundwater Recharge Program, a network of pipelines that direct stormwater runoff, imported water from the State Water Project, and IEUA-recycled water to 16 recharge sites. Most of these are basins designed to hold the water and allow it to percolate into the ground. This program helps ensure the availability of local groundwater supplies and has become a nationally acclaimed, award-winning program because it relies on local resources, natural organic cycles, innovative treatment techniques and energy-saving methods.

Wastewater collection and treatment

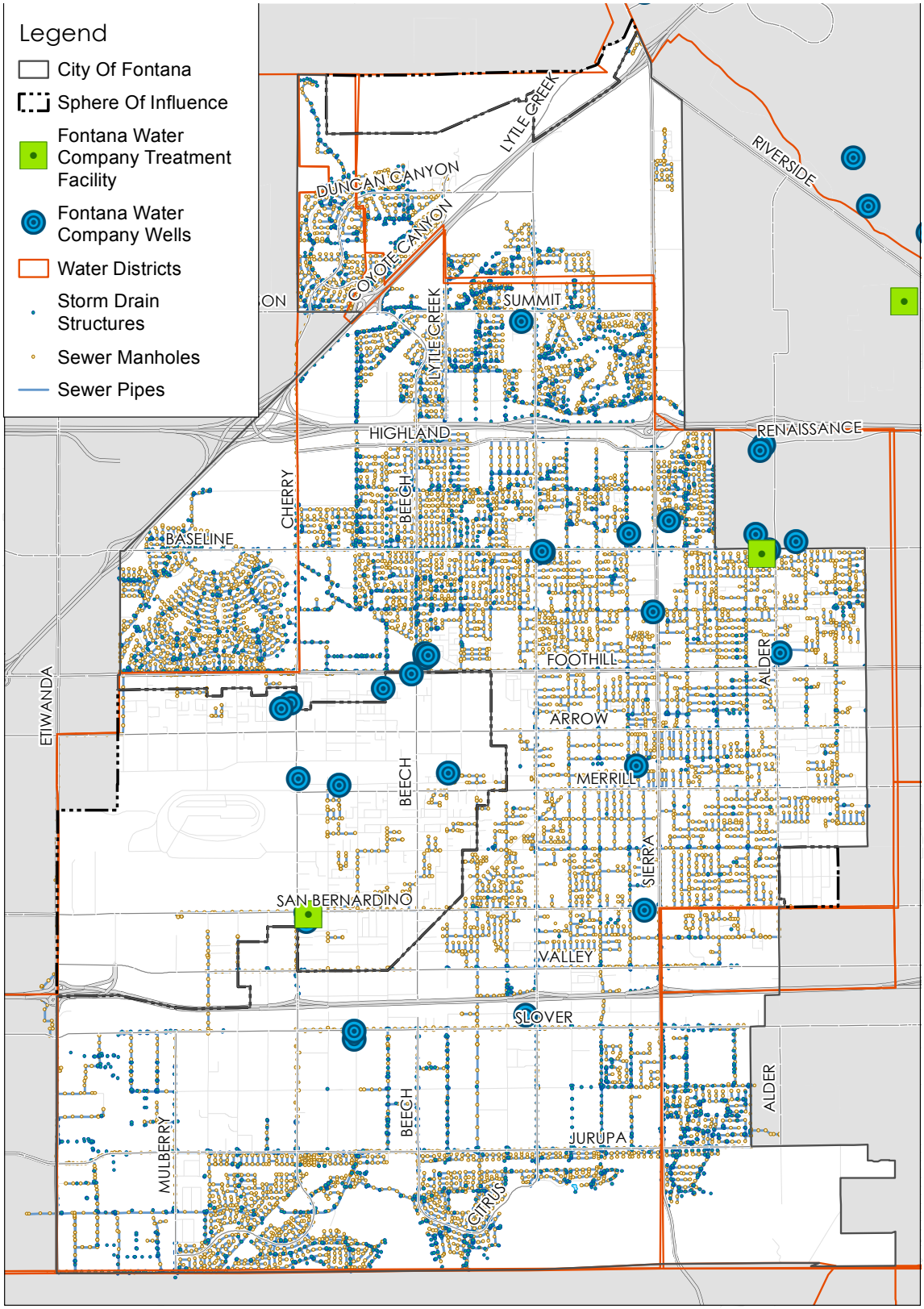
In addition to being a water wholesaler, the IEUA also collects and treats wastewater; produces high-quality renewable products such as recycled water, compost and energy; and promotes sustainable use of groundwater and development of local water supplies. The IEUA owns and operates six regional wastewater treatment facilities, including one in nearby Ontario and one in Rancho Cucamonga.

The City of Fontana owns the sewer lines (more than 250 miles) and pump stations in the city. Wastewater treatment is provided by IEUA.

Stormwater management

Fontana participates in a regional stormwater permit, overseen by the Santa Ana Regional Water Quality Control Board, under the federal Clean Water Act and the Water Pollution Control Act. The National Pollutant Discharge Elimination System (NPDES) established permits for regulating both point and nonpoint pollution to the navigable waters of the United States. "Point" pollution comes from a specific location, such as a factory. "Nonpoint" pollution comes from general stormwater runoff. It can include pollutants such as oil, grease and chemicals from streets and parking areas, fertilizer and pesticides from lawns, sediment from poorly managed construction sites, and bacteria from pet and wildlife wastes and faulty septic systems.

In addition to enforcement of NPDES permits, the City of Fontana is focusing on managing stormwater through development standards that promote on-site treatment of stormwater, including with permeable pavement and low-impact development, as well as other best management practices (BMPs). These practices contribute to groundwater recharge. Stormwater management that enhances stormwater percolation on site by using or mimicking natural systems is called "green infrastructure."



Water and Sewer Infrastructure
October, 2015
Data source: City of Fontana, 2015

Solid waste

Solid waste disposal services for Fontana are provided by Burrtec Waste Industries, a private company under franchise agreement with the City of Fontana. Burrtec also operates Fontana's curbside recycling (including greenwaste recycling) program. The city recycles over 50% of solid waste and will meet state requirements of 75% recycling by 2020. Currently, the Mid-Valley Landfill located adjacent to Fontana, in Rialto, is the primary solid waste depository for the area. It has approximately 40 years of capacity left.

The challenge for Fontana, as well as communities throughout the state, is to continue to find diversion, recycling and reuse strategies instead of relying on sanitary landfills as the primary method of managing solid waste. As the region grows, it becomes more difficult to site or expand landfills due to the unpopularity of these types of facilities.

Energy

California utilities, including Southern California Edison (SCE), have been directed to re-align their energy efficiency programs to help meet statewide sustainability goals under California's Long Term Energy Efficiency Strategic Plan (the Strategic Plan) with four Big Bold Energy Efficiency Strategies. Two of these strategies are directly related to zero net energy (ZNE):

- All new residential construction in California will be zero net energy by 2020.
- All new commercial construction and 50% of existing commercial buildings in California will be zero net energy by 2030.

Zero net energy means that a building consumes no more energy than the amount of renewable energy produced on site. On Earth Day, 2015, the City of Fontana introduced the state's first zero net energy residential community, consisting of 20 homes. Located in the Sierra Crest development, the homes are projected to use 60% less energy than a comparable home built to meet current code. This project is a partnership of SCE, the Electric Power Research Institute, the California Public Utilities Commission, and private companies, including one of the nation's largest home builders. SCE will use this project to evaluate impacts associated with large-scale introductions of ZNE homes into the electric grid.

Telecommunications providers

Fontana has access to many telephone and Internet services providers. The largest are AT&T and Time Warner Cable. Public Internet access is available at city facilities and libraries.

7. COMMUNITY DESIGN AND LAND USE REGULATION

Fontana's community design character reflects different development patterns in parts of the city that developed at different time periods. Older parts of the city consist of a modified grid pattern, including some cul-de-sacs with single-family and some multifamily buildings, typically with short setbacks from the sidewalk or street. Large-block residential developments created through specific plans, starting in the 1980s, display the curved streets and cul-de-sac design of suburban-style development. Land on many of the city's major arterial streets is underutilized, while residential developments tend to be inward-looking, with few connections to arterials.

☞ *Findings*

- **Fontana's overall community design reflects 20th-century suburban models characterized by separated land uses and limited connectivity.**
- **East-west connections in Fontana are better than north-south connections.**
- **Planned development through specific plans has been the design vehicle of choice for several decades.**
- **Planned development areas are typically inward-looking. Development along arterials in newer areas is usually walled or fenced, with large amounts of landscaping in more expensive areas.**
- **Newer retail is organized into shopping centers with perimeter buildings located around parking.**
- **Arterial streets south of SR-210 have significant underutilized or vacant land.**
- **There are opportunities for neighborhood infill development along major boulevards as well as on local streets in the core areas of the city.**
- **Development patterns present challenges for more transportation choice–enhanced public transportation, walking, and bicycling.**

A. Community Design

The overall community design of Fontana reflects its development history and a strong reliance on planned development models—for large residential communities, shopping centers, and the warehouse industry. Most of today's city follows the 20th-century suburban development model of separated land uses, limited connectivity between developments, and urban design organized around the car. Fontana is characteristic of communities with a "missing middle" of housing types—such as condos, townhouses, cottage courts, and mixed-use apartment buildings—between single-family houses and older apartment complexes. While stand-alone retail can be found along older arterials, stores are increasingly organized into shopping centers. Similarly, while the planned-development model is common for

warehouse development, the city also has many truck-related and auto-related independent businesses located in light industrial areas. The design standards for newer development have evolved to avoid large expanses of parking along the street, to require significant landscaping, and to provide somewhat improved pedestrian circulation within the developments, but there is almost no true mixed-use development in Fontana.

Street frontage. Buildings oriented to the street help create environments that are pedestrian-friendly. Very few buildings are oriented to the street in Fontana. Many residential developments have 6 to 8 foot fences, and the majority of single-family homes along main arterials have their back and side yards facing the street. In addition, a number of residential developments are gated communities. This reduces the potential for pedestrian and bicycle paths to connect different parts of the city except by arterial streets lined by walls and some landscaping.

Downtown and Central Fontana. In the urbanized core and oldest part of the city, Fontana's history as a community of small farms can be detected in the pattern of relatively large blocks, except for the four blocks of the original small downtown.

- **Block structure and walkability.** Central Fontana's street network evolved from the original Fontana Farms rural pattern without any systematic introduction of a town pattern. The majority of city blocks in Fontana exceed 2,400 feet in perimeter (approx. 0.5 mile), with many that are significantly larger. This is in contrast with most successful city center districts and neighborhoods, which consistently have block perimeters in the 1,300- to 1,600-foot range. In addition, successful downtowns often have pedestrian passages through the block from the street to internal parking areas, or right through the block. Overall, Central Fontana's block structure shows few mid-block streets and crossings. Crosswalks are inconveniently located, and pedestrians cite safety concerns when crossing the street.
- **Street network.** The very large blocks are not ideal for pedestrian or bicycle movement. The blocks provide a general grid pattern, which in principle is beneficial for connectivity, walking and biking, but because the blocks are so large, a number of long cul-de-sacs have been introduced into this grid pattern instead of local through streets. As a result, there is less connectivity than might be expected even in the central part of the city.
- **Downtown Core.** While most blocks in central Fontana are large, the four blocks that make up the existing downtown are relatively shallow. These blocks have buildings sited at the sidewalk, making them pedestrian friendly and giving them a "Main Street" character. However, because the blocks are shallow and the building footprints cover most of the lots, parking can be a problem for customers for these businesses. A "park-once" district parking system, along with a very safe, comfortable and attractive pedestrian environment would support downtown revitalization.
- **Multifamily housing.** Except for public housing, there has been no new multifamily housing built in Fontana for many years. Apartment complexes found in the core on streets such as Arrow, Foothill, and Valley boulevards, are typically two or three stories, fenced, a footprint that covers most of the lot and the remainder in parking.

Residential areas. Older residential development and smaller subdivisions tucked between other land uses are designed with houses set back and facing the street. There are still some very large lots with small houses of less than 1,000 square feet from the 1950s or before, and some of these streets do not have sidewalks or curbs. Ranch-style houses from the 1960s to 1980s are very common in the city's central core. Older houses are more likely to have separate garages located toward the rear of the lot, while the more recent houses may present driveway doors as the dominant feature of the house frontage, a design choice that has been prevalent for decades and is now beginning to change. The pre-1980s subdivisions are not gated and do not have perimeter walls, though individual properties sometimes have fences or walls. Most streets have sidewalks and some also have grass parkways between the sidewalk and the vehicle lane.



1980s-era houses in South Fontana with facades dominated by garages



Heritage village cul-de-sacs and perimeter wall limit access to the Pacific Electric Trail (shown at the top of the photo).

The characteristic neighborhood form of planned communities built in the 1980s and early 1990s shows curved streets, cul-de-sacs, frontages often completely dominated by garages, sidewalks (often without parkways), and a circulation system in which the cul-de-sacs empty onto four-lane or wider collector streets lined by walls and landscaping. These collector streets connect in a limited number of locations with arterials and the greater circulation system. This limits overall connectivity. For example, where the Pacific Electric Trail (PET) was built along the northern edge of Heritage Village, there are few access points to the PET along a walled edge. As planned developments moved north of SR-210 in the 1990s and the 2000s, the same community design features were put into place with larger houses and more landscaping.

Commercial districts. With the exception of downtown Fontana's few retail blocks with buildings built to the sidewalk, developments with retail and services, like eating and drinking establishments, take four forms:

1. **Stand-alone buildings,** usually one story, with one or two curb cuts, and surrounded by parking lots. Stand-alone retail can be found on Foothill Boulevard and on Sierra Boulevard between Ceres Avenue and Marygold Avenue.
2. **Older neighborhood strip shopping centers** set back from the street with parking in front and anchored by a supermarket, drug store, or similar store. Older neighborhood centers include the Foothill Boulevard locations of Fontana Plaza and Fontana Park Plaza, a center on Baseline Avenue at Cherry, and a neighborhood center in Southridge at Cherry and Live Oak.
3. **Newer, small retail clusters at an intersection,** often anchored by a gas station. A few newer, small retail clusters have also emerged, for example, on Foothill at the Citrus Avenue intersection, where the classic suburban retail intersection has a Walgreens, a gas station, a McDonald's, and a small strip center, all of which, except for the McDonald's, have parking at the corner behind sidewalks and small landscaped setbacks. The relatively new McDonald's locates parking to the side and rear, rather than at the corner.
4. **Large neighborhood centers or small regional centers near regional arterials** such as SR-210 or I-15. The large neighborhood centers are located in North and South Fontana: Palm Court at Sierra and Slover; the Sierra Lakes Parkway big box mall at SR-210 and Falcon Ridge Town Center along I-15; and a special case, the "auto mall" just south of SR-210.

Although all of those commercial-district types are designed to accommodate the car, the newer developments have sidewalks along the streets and along the buildings and much superior landscaping. They tend to locate stores at perimeter and parking in the center. However, they typically do not provide pedestrian amenities from the sidewalks to the buildings or through the parking lots.



Modern warehouses near the Target Distribution Center

Industrial districts. Modern warehouse districts are characterized by very large boxes (often white) on well-landscaped streets. The interface between these modern warehouse areas and residential areas is typically buffered by arterial streets and commercial areas. Industrial districts also include older areas with a variety of businesses, many of them focused on trucking. In these areas, and in the southern industrial areas between I-10 and Jurupa Avenue, there are many transition areas where industrial and older residential areas are not well buffered.

Arterial corridors. Due to the large block and parcel structure along many main corridors, some residential, commercial and industrial developments are set back far from the street, with parking lots and other paved areas along the street. In addition to projecting a low-quality, semi-vacant image to the street, this pattern discourages all modes of transportation other than the car. Many of the travel lanes are 12 to 13 feet wide on major streets , a width that encourages speeding. However, having a large amount of underutilized property along street frontages and wide streets also represents opportunities at frequent intervals along the Sierra, Valley, Foothill and Arrow corridors to introduce new pedestrian and bicycle facilities, landscaping, and other streetscape elements, which can knit together new infill development as it occurs.

Vacant lots along Foothill and Arrow boulevards offer opportunities for compact, infill development of various types. Large vacant parcels on Sierra Avenue between Foothill and Baseline and along Valley could be the site of neighborhood infill development. Parking consolidation and future parking structure locations and capacities would need to be considered. Significant vacancies exist at the north end of Sierra, south of Baseline, and they continue west along Highland Avenue. Many of these parcels are greenfields or razed properties.

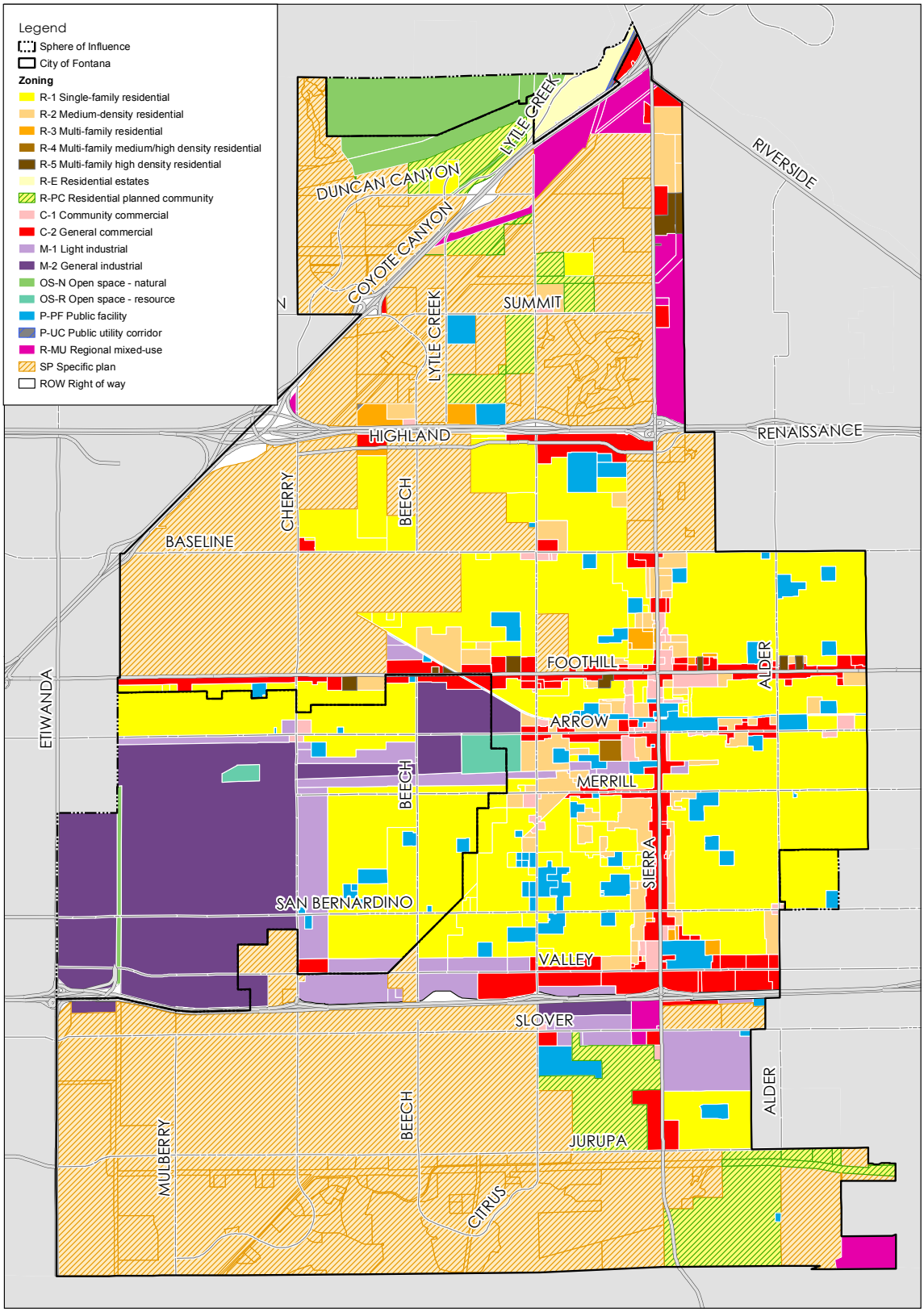
Many paved lots are present at the key intersections of Sierra/Foothill, Sierra/Arrow, and Sierra/Valley. Many of these lots are used for parking and appear to be underutilized, offering significant opportunities for compact, infill development of various types.

The City has established zoning overlay districts for Downtown, the hospital area, and three major corridors—Sierra, Foothill and Arrow. Because of the lack of significant development activity in recent years, the impact of design standards in these overlay districts has been limited, though it can be seen in the landscaping at a few locations of new commercial development. Valley Boulevard does not have an overlay district, but may benefit from one.

B. Zoning Code and Zoning Issues

California statute requires each city and county to adopt a general plan "for the physical development of the county or city, and any land outside its boundaries which bears relation to its planning." According to the California Governor's Office of Planning and Research, "The success of a general plan, and in particular the land use element, rests in part upon the effectiveness of a consistent zoning ordinance in translating the long-term objectives and policies contained in the [general] plan into everyday decisions."

General plans are long-term policy documents, developed to guide decision making for 15 to 20 years. In contrast, zoning codes are immediate regulatory documents, designed to implement the general plan, in part, by regulating allowed, conditionally allowed, and prohibited land uses. For general law cities (as opposed to charter cities) like Fontana, zoning codes must be consistent with the city's general plan. Aside from general plan consistency, zoning codes must comply with many other state laws.



Existing Zoning
October, 2015
Data source: City of Fontana, 2015

Fontana Forward

0 2,500 5,000 10,000
Scale 1:75,000 Feet

Following the City's update to its General Plan in 2003, the City updated the Zoning code in January 2004. Since the comprehensive update in 2004, there have been 24 code amendments. Most code amendments (13 of the 24) concerned land uses or specific standards for land uses (e.g., adding a new allowed use to a zone or requirements for smoke/vapor shops, etc.) or general development standards (e.g., modifying landscaping requirements).

Since 1995, only one amendment modified or added a new zone(s)—the 2014 amendment that added the Multiple-family Medium/High Density Residential Zone (R-4), Multi-family High Density Residential Zone (R-5), and the Emergency Shelter Overlay Zone. This amendment was added to comply with state housing law.

The Existing Zoning map shows how the use of specific plans for planned development has affected the city's zoning map. Almost all of North Fontana, half of the area between SR-210 and Foothill Blvd, and two-thirds of South Fontana is covered by specific plans whose allocation of land uses, densities, and design standards are treated as zoning.

Zoning, of course, does not in itself cause development to occur. There is some sentiment that the city's zoning code is unnecessarily complex. Modern zoning codes strive for as much simplicity, transparency and streamlining as is consistent with safeguarding the public's interest in quality development. Citizens should be able to understand zoning requirements and development standards—not just developers and their consultants. Unlike many modern zoning codes, Fontana's code does not include illustrations that show what is required or preferred, and what is not permitted. With the buildout of the remaining large specific plans, Fontana will increasingly need to focus on redevelopment of older areas in order to grow.

APPENDIX C
AIR QUALITY MODEL OUTPUT

Land Use	2003 General Plan (acres)	Proposed General Plan (acres)	Difference between 2003 GP & Proposed GP Update (+/- acres)	Area & Energy Operation Phase Emissions (pounds/day/acre)						Mobile Operation Phase Emissions (pounds/day/acre)					
				ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Residential	15,723	15,474	-249	4.38	0.42	9.02	0.02	1.17	1.17	0.25	1.59	3.04	0.01	0.76	0.21
Commercial	2,425	1,170	-1,255	0.96	0.04	0.03	0.00	0.00	0.00	1.20	7.59	14.41	0.05	3.58	0.99
General Industrial	8,149	8,526	377	1.00	0.38	0.32	0.00	0.03	0.03	0.82	5.37	11.10	0.04	2.86	0.79
Public	3,710	3,328	-382	0.77	1.08	0.91	0.01	0.08	0.08	6.58	38.11	55.37	0.19	11.86	3.28
Open Space	0	30	30	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.33	0.58	0.00	0.14	0.04
Mixed Use	1,075	2,564	1,489	1.51	0.12	1.93	0.00	0.25	0.25	2.34	13.67	20.49	0.07	4.48	1.24

Source: California Emissions Estimator Model

Notes:

1. Residential includes a combination of Single Family Residence, Condos/Townhomes, and Low Rise Apartment subtypes
2. commercial includes Office Park
3. Industrial includes both General Heavy Industrial and General Light Industrial Land Uses
4. Public includes Government Office Building, Parking Lot, and Restaurants
5. Open Space includes a combination of Education, Commercial, and Recreation land uses
6. Mixed Use includes a combination of Residential (Townhomes/Condos subtype), Commercial (General Office Building subtype), and Retail (Strip Mall subtype)

Land Use	2003 General Plan (acres)	Area & Energy Operation Phase Emissions (total pounds/day)						Mobile Operation Phase Emissions (total pounds/day)					
		ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Residential[1]	15,723	68928.0597	6547.0572	141835.6107	320.12028	18473.73885	18473.73885	3963.7683	25040.4498	47722.4496	166.6638	11878.7265	3276.6732
Commercial[2]	2,425	2339.3975	91.665	79.54	4.85	11.155	11.155	2918.0025	18405.9925	34946.675	121.9775	8683.44	2394.93
General Industrial[3]	8,149	8168.5576	3097.4349	2610.1247	17.9278	249.3594	249.3594	6666.6969	43748.7214	90466.1235	319.4408	23336.2913	6432.0057
Public	3,710	2873.024	4012.8844	3387.1558	24.0779	305.0362	305.0362	24415.139	141389.955	205406.005	687.092	44013.585	12171.026
Open Space	0	0	0	0	0	0	0	0	0	0	0	0	0
Mixed Use[4]	1,075	1618.53075	128.4625	2075.18	4.816	268.5135	268.5135	2518.51	14698.1525	22023.095	74.0675	4814.925	1330.9575

Land Use	Proposed General Plan (acres)	Area & Energy Operation Phase Emissions (total pounds/day)						Mobile Operation Phase Emissions (total pounds/day)					
		ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Residential[1]	15,474	67836.4686	6443.3736	139589.4066	315.05064	18181.1763	18181.1763	3900.9954	24643.8924	46966.6848	164.0244	11690.607	3224.7816
Commercial[2]	1,170	1128.699	44.226	38.376	2.34	5.382	5.382	1407.861	8880.417	16860.87	58.851	4189.536	1155.492
General Industrial[3]	8,526	8546.4624	3240.7326	2730.8778	18.7572	260.8956	260.8956	6975.1206	45772.6836	94651.389	334.2192	24415.9062	6729.5718
Public	3,328	2577.2032	3599.69792	3038.39744	21.59872	273.62816	273.62816	21901.2352	126831.744	184256.384	616.3456	39481.728	10917.8368
Open Space	30	0.0675	0	0.003	0	0	0	1.581	9.75	17.523	0.0606	4.239	1.17
Mixed Use[4]	2,564	3860.38404	306.398	4949.5456	11.48672	640.43592	640.43592	6006.9392	35056.8028	52527.6424	176.6596	11484.156	3174.4884

Land Use	2003 General Plan (acres)	Mobile Operation Phase Emissions (total pounds/day) with 9% Reduction in Vehicle Miles Travelled					
		ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Residential[1]	15,723	3607.029153	22786.80932	43427.42914	151.664058	10809.64112	2981.772612
Commercial[2]	2,425	2655.382275	16749.45318	31801.47425	110.999525	7901.9304	2179.3863
General Industrial[3]	8,149	6066.694179	39811.33647	82324.17239	290.691128	21236.02508	5853.125187
Public	3,710	22217.77649	128664.8591	186919.4646	625.25372	40052.36235	11075.63366
Open Space	0	0	0	0	0	0	0
Mixed Use[4]	1,075	2291.8441	13375.31878	20041.01645	67.401425	4381.58175	1211.171325

Land Use	Difference in Area & Energy Operation Phase Emissions (total pounds/day)						Difference in Mobile Operation Phase Emissions (total pounds/day)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Residential[1]	-1091.59	-103.68	-2246.20	-5.07	-292.56	-292.56	-62.77	-396.56	-755.76	-2.64	-188.12	-51.89
Commercial[2]	-1210.70	-47.44	-41.16	-2.51	-5.77	-5.77	-1510.14	7.59	14.41	0.05	3.58	0.99
General Industrial[3]	377.90	143.30	120.75	0.83	11.54	11.54	308.42	5.37	11.10	0.04	2.86	0.79
Public	-295.82	-413.19	-348.76	-2.48	-31.41	-31.41	-2513.90	5.37	11.10	0.04	2.86	0.79
Open Space	0.07	0.00	0.00	0.00	0.00	0.00	1.58	5.37	11.10	0.04	2.86	0.79
Mixed Use[4]	2241.85	177.94	2874.37	6.67	371.92	371.92	3488.43	10.66	17.36	0.06	3.99	1.10
NET DIFFERENCE	21.72	-243.08	359.00	-2.56	53.72	53.72	-288.38	-362.20	-690.69	-2.41	-171.96	-47.43

Land Use	Difference in Area & Energy Operation Phase Emissions (total pounds/day) with 9% Reduction in Vehicle Miles Travelled						Difference in Mobile Operation Phase Emissions (total pounds/day) with 9% Reduction in Vehicle Miles Travelled					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Residential[1]	-1091.59	-103.68	-2246.20	-5.07	-292.56	-292.56	-356.74	-2253.64	-4295.02	-15.00	-1069.09	-294.90
Commercial[2]	-1210.70	-47.44	-41.16	-2.51	-5.77	-5.77	-262.62	7.59	14.41	0.05	3.58	0.99
General Industrial[3]	377.90	143.30	120.75	0.83	11.54	11.54	-600.00	5.37	11.10	0.04	2.86	0.79
Public	-295.82	-413.19	-348.76	-2.48	-31.41	-31.41	-2197.36	5.37	11.10	0.04	2.86	0.79
Open Space	0.07	0.00	0.00	0.00	0.00	0.00	0.00	5.37	11.10	0.04	2.86	0.79
Mixed Use[4]	2241.85	177.94	2874.37	6.67	371.92	371.92	-226.67	10.66	17.36	0.06	3.99	1.10
NET DIFFERENCE	21.72	-243.08	359.00	-2.56	53.72	53.72	-3643.39	-2219.28	-4229.94	-14.77	-1052.92	-290.44

Land Use	Difference in Emissions (2003 GP vs Proposed GP)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Total Difference	-266.67	-605.28	-331.69	-4.97	-118.24	6.28
Total Difference w 9% VMT Reduction	-3621.68	-2462.36	-3870.95	-17.33	-999.21	-236.73

Land Use	2003 General Plan (acres)	Proposed General Plan (acres)	Difference between 2003 GP & Proposed GP Update (+/- acres)	Area & Energy Operation Phase Greenhouse Gas Emissions (Metric Tons/Year/Acre)				Mobile Operation Phase Greenhouse Gas Emissions (Metric Tons/Year/Acre)			
				CO2	CH4	N2O	CO2e	CO2	CH4	N2O	CO2e
Residential	15,723	15,474	-249	59.04	0.13	0.00	62.82	162.98	0.01	0.00	163.20
Commercial	2,425	1,170	-1,255	204.89	0.74	0.01	225.57	591.81	0.03	0.00	592.62
General Industrial	8,149	8,526	377	271.61	0.97	0.01	299.08	467.49	0.02	0.00	468.08
Public	3,710	3,328	-382	565.15	2.49	0.01	631.02	2311.29	0.16	0.00	2315.31
Open Space	0	30	30	4.24	0.00	0.00	4.28	9.83	0.00	0.00	9.85
Mixed Use	1,075	2,564	1,489	129.78	0.46	0.00	142.37	1276.18	0.08	0.00	1278.27

Land Use	2003 General Plan (acres)	Area & Energy Operation Phase Greenhouse Gas Emissions - 2003 General Plan (Metric Tons/Year)				Mobile Operation Phase Greenhouse Gas Emissions - 2003 General Plan (Metric Tons/Year)			
		CO2	CH4	N2O	CO2e	CO2	CH4	N2O	CO2e
Residential	15,723	928208.8773	2102.95125	23.42727	987784.8966	2562539.257	138.51963	0	2566001.462
Commercial	2,425	496861.645	1786.2065	18.43	547017.435	1435146.283	77.8425	0	1437092.103
General Industrial	8,149	2213371.892	7926.36932	86.21642	2437225.248	3809551.563	191.5015	0	3814343.175
Public	3,710	2096699.377	9235.674	45.262	2341073.07	8574896.659	596.568	0	8589813.827
Open Space	0	0	0	0	0	0	0	0	0
Mixed Use	1,075	139511.78	497.5745	3.68725	153052.1575	1371889.63	89.9775	0	1374138.315

Land Use	Proposed General Plan (acres)	Area & Energy Operation Phase Greenhouse Gas Emissions - Proposed General Plan (Metric Tons/Year)				Mobile Operation Phase Greenhouse Gas Emissions - Proposed General Plan (Metric Tons/Year)			
		CO2	CH4	N2O	CO2e	CO2	CH4	N2O	CO2e
Residential	15,474	913509.1374	2069.6475	23.05626	972141.6708	2521957.162	136.32594	0	2525364.537
Commercial	1,170	239722.938	861.7986	8.892	263921.814	692421.093	37.557	0	693359.901
General Industrial	8,526	2315769.88	8293.06968	90.20508	2549979.441	3985794.162	200.361	0	3990807.45
Public	3,328	1880812.81	8284.7232	40.6016	2100024.576	7691982.771	535.1424	0	7705363.994
Open Space	30	127.0806	0.0375	0.0012	128.3439	294.951	0.0168	0	295.371
Mixed Use	2,564	332751.8176	1186.77304	8.79452	365047.1924	3272116.29	214.6068	0	3277479.665

Land Use	2003 General Plan (acres)	Mobile Operation Phase Emissions (Metric Tons/Year) with 9% Reduction in Vehicle Miles Travelled			
		CO2	CH4	N2O	CO2e
Residential	15,723	2331910.724	126.0528633	0	2335061.33
Commercial	2,425	1305983.117	70.836675	0	1307753.813
General Industrial	8,149	3466691.922	174.266365	0	3471052.289
Public	3,710	7803155.96	542.87688	0	7816730.583
Open Space	0	0	0	0	0
Mixed Use	1,075	1248419.563	81.879525	0	1250465.867

Land Use	Difference in Area & Energy Operation Phase Emissions (Metric Tons/Year)				Difference in Mobile Operation Phase Emissions (Metric Tons/Year)			
	CO2	CH4	N2O	CO2e	CO2	CH4	N2O	CO2e
Residential	-14699.74	-33.30	-0.37	-15643.23	-40582.09	-2.19	0.00	-40636.92
Commercial	-257138.71	-924.41	-9.54	-283095.62	-742725.19	-40.29	0.00	-743732.20
General Industrial	102397.99	366.70	3.99	112754.19	176242.60	8.86	0.00	176464.28
Public	-215886.57	-950.95	-4.66	-241048.49	-882913.89	-61.43	0.00	-884449.83
Open Space	127.08	0.04	0.00	128.34	294.95	0.02	0.00	295.37
Mixed Use	193240.04	689.20	5.11	211995.03	1900226.66	124.63	0.00	1903341.35
NET DIFFERENCE	-191959.91	-852.73	-5.47	-214909.77	410543.04	29.60	0.00	411282.04

Land Use	Difference in Area & Energy Operation Phase Emissions (Metric Tons/Year) with 9% Reduction in Vehicle Miles Travelled				Difference in Mobile Operation Phase Emissions (Metric Tons/Year) with 9% Reduction in Vehicle Miles Travelled			
	CO2	CH4	N2O	CO2e	CO2	CH4	N2O	CO2e
Residential	-14699.74	-33.30	-0.37	-15643.23	-230628.53	-12.47	0.00	-230940.13
Commercial	-257138.71	-924.41	-9.54	-283095.62	-129163.17	-7.01	0.00	-129338.29
General Industrial	102397.99	366.70	3.99	112754.19	-342859.64	-17.24	0.00	-343290.89
Public	-215886.57	-950.95	-4.66	-241048.49	-771740.70	-53.69	0.00	-773083.24
Open Space	127.08	0.04	0.00	128.34	0.00	0.00	0.00	0.00
Mixed Use	193240.04	689.20	5.11	211995.03	-123470.07	-8.10	0.00	-123672.45
NET DIFFERENCE	-191959.91	-852.73	-5.47	-214909.77	-1597862.11	-98.50	0.00	-1600325.00

Plan Component	Total Difference in Greenhouse Gas Emissions 2003 General Plan vs Proposed General Plan (MTCO2E)			
	CO2	CH4	N2O	CO2E
Proposed General Plan Update	218583.13	-823.13	-5.47	196372.27
Proposed General Plan Update with 9% Reduction in VMT	-1789822.01	-951.22	-5.47	-1815234.77

Fontana GP - San Bernardino-South Coast County, Annual

Fontana General Plan Update

San Bernardino-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	43.00	1000sqft	0.99	43,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	OperationalYear	2018	2020

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.2696	0.6876	0.5086	8.7000e-004	0.0122	0.0414	0.0536	3.4500e-003	0.0383	0.0417	0.0000	79.1556	79.1556	0.0193	0.0000	79.6371
Maximum	**0.2696**	**0.6876**	**0.5086**	**8.7000e-004**	**0.0122**	**0.0414**	**0.0536**	**3.4500e-003**	**0.0383**	**0.0417**	**0.0000**	**79.1556**	**79.1556**	**0.0193**	**0.0000**	**79.6371**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.2696	0.6876	0.5086	8.7000e-004	0.0122	0.0414	0.0536	3.4500e-003	0.0383	0.0417	0.0000	79.1555	79.1555	0.0193	0.0000	79.6371
Maximum	**0.2696**	**0.6876**	**0.5086**	**8.7000e-004**	**0.0122**	**0.0414**	**0.0536**	**3.4500e-003**	**0.0383**	**0.0417**	**0.0000**	**79.1555**	**79.1555**	**0.0193**	**0.0000**	**79.6371**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-20-2018	7-19-2018	0.4103	0.4103
2	7-20-2018	9-30-2018	0.3371	0.3371
		Highest	0.4103	0.4103

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Area	0.1754	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0700e-003	1.0700e-003	0.0000	0.0000	1.1400e-003
Energy	6.8000e-004	6.1800e-003	5.1900e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	146.0596	146.0596	5.8800e-003	1.3100e-003	146.5981
Mobile	0.1396	1.0525	1.7705	6.4000e-003	0.4702	5.8600e-003	0.4761	0.1260	5.5100e-003	0.1316	0.0000	591.8129	591.8129	0.0321	0.0000	592.6153
Waste						0.0000	0.0000		0.0000	0.0000	8.1176	0.0000	8.1176	0.4797	0.0000	20.1110
Water						0.0000	0.0000		0.0000	0.0000	2.4246	48.2885	50.7131	0.2510	6.2900e-003	58.8640
Total	**0.3156**	**1.0587**	**1.7762**	**6.4400e-003**	**0.4702**	**6.3300e-003**	**0.4766**	**0.1260**	**5.9800e-003**	**0.1320**	**10.5422**	**786.1621**	**796.7044**	**0.7687**	**7.6000e-003**	**818.1895**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1754	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0700e-003	1.0700e-003	0.0000	0.0000	1.1400e-003
Energy	6.8000e-004	6.1800e-003	5.1900e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	146.0596	146.0596	5.8800e-003	1.3100e-003	146.5981
Mobile	0.1396	1.0525	1.7705	6.4000e-003	0.4702	5.8600e-003	0.4761	0.1260	5.5100e-003	0.1316	0.0000	591.8129	591.8129	0.0321	0.0000	592.6153
Waste						0.0000	0.0000		0.0000	0.0000	8.1176	0.0000	8.1176	0.4797	0.0000	20.1110
Water						0.0000	0.0000		0.0000	0.0000	2.4246	48.2885	50.7131	0.2510	6.2900e-003	58.8640
Total	**0.3156**	**1.0587**	**1.7762**	**6.4400e-003**	**0.4702**	**6.3300e-003**	**0.4766**	**0.1260**	**5.9800e-003**	**0.1320**	**10.5422**	**786.1621**	**796.7044**	**0.7687**	**7.6000e-003**	**818.1895**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e

Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/20/2018	5/3/2018	5	10	
2	Site Preparation	Site Preparation	5/4/2018	5/4/2018	5	1	
3	Grading	Grading	5/5/2018	5/8/2018	5	2	
4	Building Construction	Building Construction	5/9/2018	9/25/2018	5	100	
5	Paving	Paving	9/26/2018	10/2/2018	5	5	
6	Architectural Coating	Architectural Coating	10/3/2018	10/9/2018	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 64,500; Non-Residential Outdoor: 21,500; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Graders	1	8.00	187	0.41
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42

Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	3.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	14.00	7.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.3200e-003	0.0472	0.0389	6.0000e-005		3.1100e-003	3.1100e-003		2.9700e-003	2.9700e-003	0.0000	5.3041	5.3041	1.0200e-003	0.0000	5.3297
Total	**5.3200e-003**	**0.0472**	**0.0389**	**6.0000e-005**		**3.1100e-003**	**3.1100e-003**		**2.9700e-003**	**2.9700e-003**	**0.0000**	**5.3041**	**5.3041**	**1.0200e-003**	**0.0000**	**5.3297**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	3.0000e-004	2.5000e-004	2.4400e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5021	0.5021	2.0000e-005	0.0000	0.5026
Total	**3.0000e-004**	**2.5000e-004**	**2.4400e-003**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**5.5000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.5021**	**0.5021**	**2.0000e-005**	**0.0000**	**0.5026**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.3200e-003	0.0472	0.0389	6.0000e-005		3.1100e-003	3.1100e-003		2.9700e-003	2.9700e-003	0.0000	5.3041	5.3041	1.0200e-003	0.0000	5.3296
Total	**5.3200e-003**	**0.0472**	**0.0389**	**6.0000e-005**		**3.1100e-003**	**3.1100e-003**		**2.9700e-003**	**2.9700e-003**	**0.0000**	**5.3041**	**5.3041**	**1.0200e-003**	**0.0000**	**5.3296**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.5000e-004	2.4400e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5021	0.5021	2.0000e-005	0.0000	0.5026
Total	**3.0000e-004**	**2.5000e-004**	**2.4400e-003**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**5.5000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.5021**	**0.5021**	**2.0000e-005**	**0.0000**	**0.5026**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9000e-004	4.8800e-003	2.1300e-003	0.0000		2.1000e-004	2.1000e-004		1.9000e-004	1.9000e-004	0.0000	0.4458	0.4458	1.4000e-004	0.0000	0.4492

Total	**3.9000e-004**	**4.8800e-003**	**2.1300e-003**	**0.0000**	**2.7000e-004**	**2.1000e-004**	**4.8000e-004**	**3.0000e-005**	**1.9000e-004**	**2.2000e-004**	**0.0000**	**0.4458**	**0.4458**	**1.4000e-004**	**0.0000**	**0.4492**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.2000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0251	0.0251	0.0000	0.0000	0.0251
Total	**1.0000e-005**	**1.0000e-005**	**1.2000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0251**	**0.0251**	**0.0000**	**0.0000**	**0.0251**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9000e-004	4.8800e-003	2.1300e-003	0.0000		2.1000e-004	2.1000e-004		1.9000e-004	1.9000e-004	0.0000	0.4458	0.4458	1.4000e-004	0.0000	0.4492
Total	**3.9000e-004**	**4.8800e-003**	**2.1300e-003**	**0.0000**	**2.7000e-004**	**2.1000e-004**	**4.8000e-004**	**3.0000e-005**	**1.9000e-004**	**2.2000e-004**	**0.0000**	**0.4458**	**0.4458**	**1.4000e-004**	**0.0000**	**0.4492**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.2000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0251	0.0251	0.0000	0.0000	0.0251
Total	**1.0000e-005**	**1.0000e-005**	**1.2000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0251**	**0.0251**	**0.0000**	**0.0000**	**0.0251**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0600e-003	9.4300e-003	7.7800e-003	1.0000e-005		6.2000e-004	6.2000e-004		5.9000e-004	5.9000e-004	0.0000	1.0608	1.0608	2.0000e-004	0.0000	1.0659
Total	**1.0600e-003**	**9.4300e-003**	**7.7800e-003**	**1.0000e-005**	**7.5000e-004**	**6.2000e-004**	**1.3700e-003**	**4.1000e-004**	**5.9000e-004**	**1.0000e-003**	**0.0000**	**1.0608**	**1.0608**	**2.0000e-004**	**0.0000**	**1.0659**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	5.0000e-005	4.9000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1004	0.1004	0.0000	0.0000	0.1005
Total	**6.0000e-005**	**5.0000e-005**	**4.9000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1004**	**0.1004**	**0.0000**	**0.0000**	**0.1005**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0600e-003	9.4300e-003	7.7800e-003	1.0000e-005		6.2000e-004	6.2000e-004		5.9000e-004	5.9000e-004	0.0000	1.0608	1.0608	2.0000e-004	0.0000	1.0659
Total	**1.0600e-003**	**9.4300e-003**	**7.7800e-003**	**1.0000e-005**	**7.5000e-004**	**6.2000e-004**	**1.3700e-003**	**4.1000e-004**	**5.9000e-004**	**1.0000e-003**	**0.0000**	**1.0608**	**1.0608**	**2.0000e-004**	**0.0000**	**1.0659**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	5.0000e-005	4.9000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1004	0.1004	0.0000	0.0000	0.1005
Total	**6.0000e-005**	**5.0000e-005**	**4.9000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1004**	**0.1004**	**0.0000**	**0.0000**	**0.1005**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0542	0.5516	0.3876	5.7000e-004		0.0354	0.0354		0.0326	0.0326	0.0000	52.0058	52.0058	0.0162	0.0000	52.4106
Total	**0.0542**	**0.5516**	**0.3876**	**5.7000e-004**		**0.0354**	**0.0354**		**0.0326**	**0.0326**	**0.0000**	**52.0058**	**52.0058**	**0.0162**	**0.0000**	**52.4106**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4400e-003	0.0436	9.9000e-003	1.0000e-004	2.2100e-003	3.0000e-004	2.5100e-003	6.4000e-004	2.9000e-004	9.2000e-004	0.0000	9.0893	9.0893	6.6000e-004	0.0000	9.1059
Worker	4.1300e-003	3.4800e-003	0.0341	8.0000e-005	7.6800e-003	5.0000e-005	7.7300e-003	2.0400e-003	5.0000e-005	2.0900e-003	0.0000	7.0296	7.0296	2.6000e-004	0.0000	7.0360
Total	**5.5700e-003**	**0.0471**	**0.0440**	**1.8000e-004**	**9.8900e-003**	**3.5000e-004**	**0.0102**	**2.6800e-003**	**3.4000e-004**	**3.0100e-003**	**0.0000**	**16.1189**	**16.1189**	**9.2000e-004**	**0.0000**	**16.1419**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0542	0.5516	0.3876	5.7000e-004		0.0354	0.0354		0.0326	0.0326	0.0000	52.0058	52.0058	0.0162	0.0000	52.4105
Total	**0.0542**	**0.5516**	**0.3876**	**5.7000e-004**		**0.0354**	**0.0354**		**0.0326**	**0.0326**	**0.0000**	**52.0058**	**52.0058**	**0.0162**	**0.0000**	**52.4105**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4400e-003	0.0436	9.9000e-003	1.0000e-004	2.2100e-003	3.0000e-004	2.5100e-003	6.4000e-004	2.9000e-004	9.2000e-004	0.0000	9.0893	9.0893	6.6000e-004	0.0000	9.1059
Worker	4.1300e-003	3.4800e-003	0.0341	8.0000e-005	7.6800e-003	5.0000e-005	7.7300e-003	2.0400e-003	5.0000e-005	2.0900e-003	0.0000	7.0296	7.0296	2.6000e-004	0.0000	7.0360
Total	**5.5700e-003**	**0.0471**	**0.0440**	**1.8000e-004**	**9.8900e-003**	**3.5000e-004**	**0.0102**	**2.6800e-003**	**3.4000e-004**	**3.0100e-003**	**0.0000**	**16.1189**	**16.1189**	**9.2000e-004**	**0.0000**	**16.1419**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.3000e-003	0.0219	0.0181	3.0000e-005		1.2800e-003	1.2800e-003		1.1800e-003	1.1800e-003	0.0000	2.4270	2.4270	6.8000e-004	0.0000	2.4441
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.3000e-003**	**0.0219**	**0.0181**	**3.0000e-005**		**1.2800e-003**	**1.2800e-003**		**1.1800e-003**	**1.1800e-003**	**0.0000**	**2.4270**	**2.4270**	**6.8000e-004**	**0.0000**	**2.4441**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	2.2000e-004	2.1900e-003	1.0000e-005	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4519	0.4519	2.0000e-005	0.0000	0.4523
Total	**2.7000e-004**	**2.2000e-004**	**2.1900e-003**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4519**	**0.4519**	**2.0000e-005**	**0.0000**	**0.4523**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.3000e-003	0.0219	0.0181	3.0000e-005		1.2800e-003	1.2800e-003		1.1800e-003	1.1800e-003	0.0000	2.4270	2.4270	6.8000e-004	0.0000	2.4441
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.3000e-003**	**0.0219**	**0.0181**	**3.0000e-005**		**1.2800e-003**	**1.2800e-003**		**1.1800e-003**	**1.1800e-003**	**0.0000**	**2.4270**	**2.4270**	**6.8000e-004**	**0.0000**	**2.4441**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	2.2000e-004	2.1900e-003	1.0000e-005	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4519	0.4519	2.0000e-005	0.0000	0.4523
Total	**2.7000e-004**	**2.2000e-004**	**2.1900e-003**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4519**	**0.4519**	**2.0000e-005**	**0.0000**	**0.4523**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1993					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5000e-004	5.0100e-003	4.6400e-003	1.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	0.6383	0.6383	6.0000e-005	0.0000	0.6398
Total	**0.2001**	**5.0100e-003**	**4.6400e-003**	**1.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**0.6383**	**0.6383**	**6.0000e-005**	**0.0000**	**0.6398**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	4.0000e-005	3.7000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0753	0.0753	0.0000	0.0000	0.0754

Total	**4.0000e-005**	**4.0000e-005**	**3.7000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0753**	**0.0753**	**0.0000**	**0.0000**	**0.0754**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1993					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5000e-004	5.0100e-003	4.6400e-003	1.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	0.6383	0.6383	6.0000e-005	0.0000	0.6398
Total	**0.2001**	**5.0100e-003**	**4.6400e-003**	**1.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**0.6383**	**0.6383**	**6.0000e-005**	**0.0000**	**0.6398**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	4.0000e-005	3.7000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0753	0.0753	0.0000	0.0000	0.0754
Total	**4.0000e-005**	**4.0000e-005**	**3.7000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0753**	**0.0753**	**0.0000**	**0.0000**	**0.0754**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1396	1.0525	1.7705	6.4000e-003	0.4702	5.8600e-003	0.4761	0.1260	5.5100e-003	0.1316	0.0000	591.8129	591.8129	0.0321	0.0000	592.6153
Unmitigated	0.1396	1.0525	1.7705	6.4000e-003	0.4702	5.8600e-003	0.4761	0.1260	5.5100e-003	0.1316	0.0000	591.8129	591.8129	0.0321	0.0000	592.6153

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Office Park	491.06	70.52	32.68	1,234,897	1,234,897
Total	491.06	70.52	32.68	1,234,897	1,234,897

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Office Park	16.60	8.40	6.90	33.00	48.00	19.00	82	15	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Office Park	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	139.3363	139.3363	5.7500e-003	1.1900e-003	139.8348
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	139.3363	139.3363	5.7500e-003	1.1900e-003	139.8348

NaturalGas Mitigated	6.8000e-004	6.1800e-003	5.1900e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	6.7233	6.7233	1.3000e-004	1.2000e-004	6.7633
NaturalGas Unmitigated	6.8000e-004	6.1800e-003	5.1900e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	6.7233	6.7233	1.3000e-004	1.2000e-004	6.7633

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Office Park	125990	6.8000e-004	6.1800e-003	5.1900e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	6.7233	6.7233	1.3000e-004	1.2000e-004	6.7633
Total		**6.8000e-004**	**6.1800e-003**	**5.1900e-003**	**4.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.7000e-004**	**4.7000e-004**	**0.0000**	**6.7233**	**6.7233**	**1.3000e-004**	**1.2000e-004**	**6.7633**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Office Park	125990	6.8000e-004	6.1800e-003	5.1900e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	6.7233	6.7233	1.3000e-004	1.2000e-004	6.7633
Total		**6.8000e-004**	**6.1800e-003**	**5.1900e-003**	**4.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.7000e-004**	**4.7000e-004**	**0.0000**	**6.7233**	**6.7233**	**1.3000e-004**	**1.2000e-004**	**6.7633**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Office Park	437310	139.3363	5.7500e-003	1.1900e-003	139.8348

Total		**139.3363**	**5.7500e-003**	**1.1900e-003**	**139.8348**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Office Park	437310	139.3363	5.7500e-003	1.1900e-003	139.8348
Total		**139.3363**	**5.7500e-003**	**1.1900e-003**	**139.8348**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1754	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0700e-003	1.0700e-003	0.0000	0.0000	1.1400e-003
Unmitigated	0.1754	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0700e-003	1.0700e-003	0.0000	0.0000	1.1400e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0199					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1554					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0700e-003	1.0700e-003	0.0000	0.0000	1.1400e-003
Total	**0.1754**	**1.0000e-005**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0700e-003**	**1.0700e-003**	**0.0000**	**0.0000**	**1.1400e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0199					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1554					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0700e-003	1.0700e-003	0.0000	0.0000	1.1400e-003
Total	**0.1754**	**1.0000e-005**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0700e-003**	**1.0700e-003**	**0.0000**	**0.0000**	**1.1400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	50.7131	0.2510	6.2900e-003	58.8640
Unmitigated	50.7131	0.2510	6.2900e-003	58.8640

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Office Park	7.64255 / 4.68414	50.7131	0.2510	6.2900e-003	58.8640
Total		**50.7131**	**0.2510**	**6.2900e-003**	**58.8640**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Office Park	7.64255 / 4.68414	50.7131	0.2510	6.2900e-003	58.8640
Total		**50.7131**	**0.2510**	**6.2900e-003**	**58.8640**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	8.1176	0.4797	0.0000	20.1110
Unmitigated	8.1176	0.4797	0.0000	20.1110

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Office Park	39.99	8.1176	0.4797	0.0000	20.1110
Total		**8.1176**	**0.4797**	**0.0000**	**20.1110**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Office Park	39.99	8.1176	0.4797	0.0000	20.1110
Total		**8.1176**	**0.4797**	**0.0000**	**20.1110**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Fontana GP - San Bernardino-South Coast County, Annual

Fontana General Plan Update

San Bernardino-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	43.00	1000sqft	0.99	43,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	OperationalYear	2018	2020

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.2708	0.6886	0.5185	8.9000e-004	0.0144	0.0414	0.0558	4.0400e-003	0.0383	0.0423	0.0000	81.1892	81.1892	0.0193	0.0000	81.6725
Maximum	**0.2708**	**0.6886**	**0.5185**	**8.9000e-004**	**0.0144**	**0.0414**	**0.0558**	**4.0400e-003**	**0.0383**	**0.0423**	**0.0000**	**81.1892**	**81.1892**	**0.0193**	**0.0000**	**81.6725**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.2708	0.6886	0.5185	8.9000e-004	0.0144	0.0414	0.0558	4.0400e-003	0.0383	0.0423	0.0000	81.1891	81.1891	0.0193	0.0000	81.6725
Maximum	**0.2708**	**0.6886**	**0.5185**	**8.9000e-004**	**0.0144**	**0.0414**	**0.0558**	**4.0400e-003**	**0.0383**	**0.0423**	**0.0000**	**81.1891**	**81.1891**	**0.0193**	**0.0000**	**81.6725**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**4-20-2018**	**7-19-2018**	0.4114	0.4114
2	**7-20-2018**	**9-30-2018**	0.3382	0.3382
		Highest	0.4114	0.4114

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1754	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0700e-003	1.0700e-003	0.0000	0.0000	1.1400e-003
Energy	7.5500e-003	0.0686	0.0577	4.1000e-004		5.2200e-003	5.2200e-003		5.2200e-003	5.2200e-003	0.0000	216.3791	216.3791	7.2800e-003	2.5800e-003	217.3299
Mobile	0.0975	0.7554	1.3671	5.0600e-003	0.3817	4.6600e-003	0.3864	0.1023	4.3900e-003	0.1067	0.0000	467.4870	467.4870	0.0235	0.0000	468.0750
Waste						0.0000	0.0000		0.0000	0.0000	10.8235	0.0000	10.8235	0.6397	0.0000	26.8147
Water						0.0000	0.0000		0.0000	0.0000	3.1547	41.2543	44.4090	0.3257	8.0000e-003	54.9370
Total	**0.2804**	**0.8241**	**1.4253**	**5.4700e-003**	**0.3817**	**9.8800e-003**	**0.3916**	**0.1023**	**9.6100e-003**	**0.1119**	**13.9782**	**725.1215**	**739.0997**	**0.9962**	**0.0106**	**767.1577**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1754	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0700e-003	1.0700e-003	0.0000	0.0000	1.1400e-003
Energy	7.5500e-003	0.0686	0.0577	4.1000e-004		5.2200e-003	5.2200e-003		5.2200e-003	5.2200e-003	0.0000	216.3791	216.3791	7.2800e-003	2.5800e-003	217.3299
Mobile	0.0975	0.7554	1.3671	5.0600e-003	0.3817	4.6600e-003	0.3864	0.1023	4.3900e-003	0.1067	0.0000	467.4870	467.4870	0.0235	0.0000	468.0750
Waste						0.0000	0.0000		0.0000	0.0000	10.8235	0.0000	10.8235	0.6397	0.0000	26.8147
Water						0.0000	0.0000		0.0000	0.0000	3.1547	41.2543	44.4090	0.3257	8.0000e-003	54.9370

Total	**0.2804**	**0.8241**	**1.4253**	**5.4700e-003**	**0.3817**	**9.8800e-003**	**0.3916**	**0.1023**	**9.6100e-003**	**0.1119**	**13.9782**	**725.1215**	**739.0997**	**0.9962**	**0.0106**	**767.1577**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/20/2018	5/3/2018	5	10	
2	Site Preparation	Site Preparation	5/4/2018	5/4/2018	5	1	
3	Grading	Grading	5/5/2018	5/8/2018	5	2	
4	Building Construction	Building Construction	5/9/2018	9/25/2018	5	100	
5	Paving	Paving	9/26/2018	10/2/2018	5	5	
6	Architectural Coating	Architectural Coating	10/3/2018	10/9/2018	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 64,500; Non-Residential Outdoor: 21,500; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73

Site Preparation	Graders	1	8.00	187	0.41
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	18.00	7.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	5.3200e-003	0.0472	0.0389	6.0000e-005		3.1100e-003	3.1100e-003		2.9700e-003	2.9700e-003	0.0000	5.3041	5.3041	1.0200e-003	0.0000	5.3297
Total	**5.3200e-003**	**0.0472**	**0.0389**	**6.0000e-005**		**3.1100e-003**	**3.1100e-003**		**2.9700e-003**	**2.9700e-003**	**0.0000**	**5.3041**	**5.3041**	**1.0200e-003**	**0.0000**	**5.3297**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.5000e-004	2.4400e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5021	0.5021	2.0000e-005	0.0000	0.5026
Total	**3.0000e-004**	**2.5000e-004**	**2.4400e-003**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**5.5000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.5021**	**0.5021**	**2.0000e-005**	**0.0000**	**0.5026**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.3200e-003	0.0472	0.0389	6.0000e-005		3.1100e-003	3.1100e-003		2.9700e-003	2.9700e-003	0.0000	5.3041	5.3041	1.0200e-003	0.0000	5.3296
Total	**5.3200e-003**	**0.0472**	**0.0389**	**6.0000e-005**		**3.1100e-003**	**3.1100e-003**		**2.9700e-003**	**2.9700e-003**	**0.0000**	**5.3041**	**5.3041**	**1.0200e-003**	**0.0000**	**5.3296**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.5000e-004	2.4400e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5021	0.5021	2.0000e-005	0.0000	0.5026
Total	**3.0000e-004**	**2.5000e-004**	**2.4400e-003**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**5.5000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.5021**	**0.5021**	**2.0000e-005**	**0.0000**	**0.5026**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9000e-004	4.8800e-003	2.1300e-003	0.0000		2.1000e-004	2.1000e-004		1.9000e-004	1.9000e-004	0.0000	0.4458	0.4458	1.4000e-004	0.0000	0.4492
Total	**3.9000e-004**	**4.8800e-003**	**2.1300e-003**	**0.0000**	**2.7000e-004**	**2.1000e-004**	**4.8000e-004**	**3.0000e-005**	**1.9000e-004**	**2.2000e-004**	**0.0000**	**0.4458**	**0.4458**	**1.4000e-004**	**0.0000**	**0.4492**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.2000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0251	0.0251	0.0000	0.0000	0.0251
Total	**1.0000e-005**	**1.0000e-005**	**1.2000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0251**	**0.0251**	**0.0000**	**0.0000**	**0.0251**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9000e-004	4.8800e-003	2.1300e-003	0.0000		2.1000e-004	2.1000e-004		1.9000e-004	1.9000e-004	0.0000	0.4458	0.4458	1.4000e-004	0.0000	0.4492
Total	**3.9000e-004**	**4.8800e-003**	**2.1300e-003**	**0.0000**	**2.7000e-004**	**2.1000e-004**	**4.8000e-004**	**3.0000e-005**	**1.9000e-004**	**2.2000e-004**	**0.0000**	**0.4458**	**0.4458**	**1.4000e-004**	**0.0000**	**0.4492**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.2000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0251	0.0251	0.0000	0.0000	0.0251
Total	**1.0000e-005**	**1.0000e-005**	**1.2000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0251**	**0.0251**	**0.0000**	**0.0000**	**0.0251**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0600e-003	9.4300e-003	7.7800e-003	1.0000e-005		6.2000e-004	6.2000e-004		5.9000e-004	5.9000e-004	0.0000	1.0608	1.0608	2.0000e-004	0.0000	1.0659
Total	**1.0600e-003**	**9.4300e-003**	**7.7800e-003**	**1.0000e-005**	**7.5000e-004**	**6.2000e-004**	**1.3700e-003**	**4.1000e-004**	**5.9000e-004**	**1.0000e-003**	**0.0000**	**1.0608**	**1.0608**	**2.0000e-004**	**0.0000**	**1.0659**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	5.0000e-005	4.9000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1004	0.1004	0.0000	0.0000	0.1005
Total	**6.0000e-005**	**5.0000e-005**	**4.9000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1004**	**0.1004**	**0.0000**	**0.0000**	**0.1005**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0600e-003	9.4300e-003	7.7800e-003	1.0000e-005		6.2000e-004	6.2000e-004		5.9000e-004	5.9000e-004	0.0000	1.0608	1.0608	2.0000e-004	0.0000	1.0659
Total	**1.0600e-003**	**9.4300e-003**	**7.7800e-003**	**1.0000e-005**	**7.5000e-004**	**6.2000e-004**	**1.3700e-003**	**4.1000e-004**	**5.9000e-004**	**1.0000e-003**	**0.0000**	**1.0608**	**1.0608**	**2.0000e-004**	**0.0000**	**1.0659**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	5.0000e-005	4.9000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1004	0.1004	0.0000	0.0000	0.1005
Total	**6.0000e-005**	**5.0000e-005**	**4.9000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1004**	**0.1004**	**0.0000**	**0.0000**	**0.1005**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0542	0.5516	0.3876	5.7000e-004		0.0354	0.0354		0.0326	0.0326	0.0000	52.0058	52.0058	0.0162	0.0000	52.4106
Total	**0.0542**	**0.5516**	**0.3876**	**5.7000e-004**		**0.0354**	**0.0354**		**0.0326**	**0.0326**	**0.0000**	**52.0058**	**52.0058**	**0.0162**	**0.0000**	**52.4106**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4400e-003	0.0436	9.9000e-003	1.0000e-004	2.2100e-003	3.0000e-004	2.5100e-003	6.4000e-004	2.9000e-004	9.2000e-004	0.0000	9.0893	9.0893	6.6000e-004	0.0000	9.1059
Worker	5.3100e-003	4.4800e-003	0.0438	1.0000e-004	9.8700e-003	7.0000e-005	9.9400e-003	2.6200e-003	6.0000e-005	2.6900e-003	0.0000	9.0380	9.0380	3.3000e-004	0.0000	9.0462
Total	**6.7500e-003**	**0.0481**	**0.0537**	**2.0000e-004**	**0.0121**	**3.7000e-004**	**0.0125**	**3.2600e-003**	**3.5000e-004**	**3.6100e-003**	**0.0000**	**18.1274**	**18.1274**	**9.9000e-004**	**0.0000**	**18.1522**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0542	0.5516	0.3876	5.7000e-004		0.0354	0.0354		0.0326	0.0326	0.0000	52.0058	52.0058	0.0162	0.0000	52.4105

Total	**0.0542**	**0.5516**	**0.3876**	**5.7000e-004**		**0.0354**	**0.0354**		**0.0326**	**0.0326**	**0.0000**	**52.0058**	**52.0058**	**0.0162**	**0.0000**	**52.4105**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4400e-003	0.0436	9.9000e-003	1.0000e-004	2.2100e-003	3.0000e-004	2.5100e-003	6.4000e-004	2.9000e-004	9.2000e-004	0.0000	9.0893	9.0893	6.6000e-004	0.0000	9.1059
Worker	5.3100e-003	4.4800e-003	0.0438	1.0000e-004	9.8700e-003	7.0000e-005	9.9400e-003	2.6200e-003	6.0000e-005	2.6900e-003	0.0000	9.0380	9.0380	3.3000e-004	0.0000	9.0462
Total	**6.7500e-003**	**0.0481**	**0.0537**	**2.0000e-004**	**0.0121**	**3.7000e-004**	**0.0125**	**3.2600e-003**	**3.5000e-004**	**3.6100e-003**	**0.0000**	**18.1274**	**18.1274**	**9.9000e-004**	**0.0000**	**18.1522**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.3000e-003	0.0219	0.0181	3.0000e-005		1.2800e-003	1.2800e-003		1.1800e-003	1.1800e-003	0.0000	2.4270	2.4270	6.8000e-004	0.0000	2.4441
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.3000e-003**	**0.0219**	**0.0181**	**3.0000e-005**		**1.2800e-003**	**1.2800e-003**		**1.1800e-003**	**1.1800e-003**	**0.0000**	**2.4270**	**2.4270**	**6.8000e-004**	**0.0000**	**2.4441**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	2.2000e-004	2.1900e-003	1.0000e-005	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4519	0.4519	2.0000e-005	0.0000	0.4523
Total	**2.7000e-004**	**2.2000e-004**	**2.1900e-003**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4519**	**0.4519**	**2.0000e-005**	**0.0000**	**0.4523**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.3000e-003	0.0219	0.0181	3.0000e-005		1.2800e-003	1.2800e-003		1.1800e-003	1.1800e-003	0.0000	2.4270	2.4270	6.8000e-004	0.0000	2.4441
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.3000e-003**	**0.0219**	**0.0181**	**3.0000e-005**		**1.2800e-003**	**1.2800e-003**		**1.1800e-003**	**1.1800e-003**	**0.0000**	**2.4270**	**2.4270**	**6.8000e-004**	**0.0000**	**2.4441**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	2.2000e-004	2.1900e-003	1.0000e-005	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4519	0.4519	2.0000e-005	0.0000	0.4523
Total	**2.7000e-004**	**2.2000e-004**	**2.1900e-003**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4519**	**0.4519**	**2.0000e-005**	**0.0000**	**0.4523**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1993					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5000e-004	5.0100e-003	4.6400e-003	1.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	0.6383	0.6383	6.0000e-005	0.0000	0.6398
Total	**0.2001**	**5.0100e-003**	**4.6400e-003**	**1.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**0.6383**	**0.6383**	**6.0000e-005**	**0.0000**	**0.6398**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	6.0000e-005	5.0000e-005	4.9000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1004	0.1004	0.0000	0.0000	0.1005
Total	**6.0000e-005**	**5.0000e-005**	**4.9000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1004**	**0.1004**	**0.0000**	**0.0000**	**0.1005**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1993					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5000e-004	5.0100e-003	4.6400e-003	1.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	0.6383	0.6383	6.0000e-005	0.0000	0.6398
Total	**0.2001**	**5.0100e-003**	**4.6400e-003**	**1.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**0.6383**	**0.6383**	**6.0000e-005**	**0.0000**	**0.6398**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	5.0000e-005	4.9000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1004	0.1004	0.0000	0.0000	0.1005
Total	**6.0000e-005**	**5.0000e-005**	**4.9000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1004**	**0.1004**	**0.0000**	**0.0000**	**0.1005**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0975	0.7554	1.3671	5.0600e-003	0.3817	4.6600e-003	0.3864	0.1023	4.3900e-003	0.1067	0.0000	467.4870	467.4870	0.0235	0.0000	468.0750
Unmitigated	0.0975	0.7554	1.3671	5.0600e-003	0.3817	4.6600e-003	0.3864	0.1023	4.3900e-003	0.1067	0.0000	467.4870	467.4870	0.0235	0.0000	468.0750

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	299.71	56.76	29.24	1,002,404	1,002,404
Total	299.71	56.76	29.24	1,002,404	1,002,404

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	141.6655	141.6655	5.8500e-003	1.2100e-003	142.1723
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	141.6655	141.6655	5.8500e-003	1.2100e-003	142.1723
NaturalGas Mitigated	7.5500e-003	0.0686	0.0577	4.1000e-004		5.2200e-003	5.2200e-003		5.2200e-003	5.2200e-003	0.0000	74.7136	74.7136	1.4300e-003	1.3700e-003	75.1576
NaturalGas Unmitigated	7.5500e-003	0.0686	0.0577	4.1000e-004		5.2200e-003	5.2200e-003		5.2200e-003	5.2200e-003	0.0000	74.7136	74.7136	1.4300e-003	1.3700e-003	75.1576

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	1.40008e+006	7.5500e-003	0.0686	0.0577	4.1000e-004		5.2200e-003	5.2200e-003		5.2200e-003	5.2200e-003	0.0000	74.7136	74.7136	1.4300e-003	1.3700e-003	75.1576
Total		**7.5500e-003**	**0.0686**	**0.0577**	**4.1000e-004**		**5.2200e-003**	**5.2200e-003**		**5.2200e-003**	**5.2200e-003**	**0.0000**	**74.7136**	**74.7136**	**1.4300e-003**	**1.3700e-003**	**75.1576**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	1.40008e+006	7.5500e-003	0.0686	0.0577	4.1000e-004		5.2200e-003	5.2200e-003		5.2200e-003	5.2200e-003	0.0000	74.7136	74.7136	1.4300e-003	1.3700e-003	75.1576
Total		**7.5500e-003**	**0.0686**	**0.0577**	**4.1000e-004**		**5.2200e-003**	**5.2200e-003**		**5.2200e-003**	**5.2200e-003**	**0.0000**	**74.7136**	**74.7136**	**1.4300e-003**	**1.3700e-003**	**75.1576**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	444620	141.6655	5.8500e-003	1.2100e-003	142.1723
Total		**141.6655**	**5.8500e-003**	**1.2100e-003**	**142.1723**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	444620	141.6655	5.8500e-003	1.2100e-003	142.1723

Total		**141.6655**	**5.8500e-003**	**1.2100e-003**	**142.1723**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1754	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0700e-003	1.0700e-003	0.0000	0.0000	1.1400e-003
Unmitigated	0.1754	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0700e-003	1.0700e-003	0.0000	0.0000	1.1400e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0199					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1554					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0700e-003	1.0700e-003	0.0000	0.0000	1.1400e-003

Total	**0.1754**	**1.0000e-005**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0700e-003**	**1.0700e-003**	**0.0000**	**0.0000**	**1.1400e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0199					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1554					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0700e-003	1.0700e-003	0.0000	0.0000	1.1400e-003
Total	**0.1754**	**1.0000e-005**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0700e-003**	**1.0700e-003**	**0.0000**	**0.0000**	**1.1400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	44.4090	0.3257	8.0000e-003	54.9370
Unmitigated	44.4090	0.3257	8.0000e-003	54.9370

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	9.94375 / 0	44.4090	0.3257	8.0000e-003	54.9370
Total		**44.4090**	**0.3257**	**8.0000e-003**	**54.9370**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	9.94375 / 0	44.4090	0.3257	8.0000e-003	54.9370
Total		**44.4090**	**0.3257**	**8.0000e-003**	**54.9370**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	10.8235	0.6397	0.0000	26.8147
Unmitigated	10.8235	0.6397	0.0000	26.8147

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	53.32	10.8235	0.6397	0.0000	26.8147
Total		**10.8235**	**0.6397**	**0.0000**	**26.8147**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	53.32	10.8235	0.6397	0.0000	26.8147

Total		**10.8235**	**0.6397**	**0.0000**	**26.8147**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Fontana GP - San Bernardino-South Coast County, Annual

Fontana General Plan Update

San Bernardino-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	3.20	Dwelling Unit	0.20	3,200.00	9
Day-Care Center	8.71	1000sqft	0.20	8,710.00	0
Government Office Building	8.71	1000sqft	0.20	8,710.00	0
Strip Mall	8.71	1000sqft	0.20	8,710.00	0
City Park	0.20	Acre	0.20	8,712.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	OperationalYear	2018	2020

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.2852	1.0935	0.8580	1.4600e-003	0.0192	0.0636	0.0828	7.0700e-003	0.0611	0.0681	0.0000	125.2294	125.2294	0.0238	0.0000	125.8248
Maximum	**0.2852**	**1.0935**	**0.8580**	**1.4600e-003**	**0.0192**	**0.0636**	**0.0828**	**7.0700e-003**	**0.0611**	**0.0681**	**0.0000**	**125.2294**	**125.2294**	**0.0238**	**0.0000**	**125.8248**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.2852	1.0935	0.8580	1.4600e-003	0.0192	0.0636	0.0828	7.0700e-003	0.0611	0.0681	0.0000	125.2293	125.2293	0.0238	0.0000	125.8247
Maximum	**0.2852**	**1.0935**	**0.8580**	**1.4600e-003**	**0.0192**	**0.0636**	**0.0828**	**7.0700e-003**	**0.0611**	**0.0681**	**0.0000**	**125.2293**	**125.2293**	**0.0238**	**0.0000**	**125.8247**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)

1	**4-20-2018**	**7-19-2018**	0.7083	0.7083
2	**7-20-2018**	**9-30-2018**	0.5294	0.5294
		Highest	0.7083	0.7083

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1307	1.2200e-003	0.0538	5.0000e-005		3.2400e-003	3.2400e-003		3.2400e-003	3.2400e-003	0.3399	0.7077	1.0476	1.0700e-003	2.0000e-005	1.0812
Energy	1.0200e-003	9.1200e-003	6.4500e-003	6.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	99.5572	99.5572	3.8900e-003	9.5000e-004	99.9374
Mobile	0.4020	2.8693	4.0663	0.0138	0.9330	0.0124	0.9454	0.2501	0.0116	0.2617	0.0000	1,276.1764	1,276.1764	0.0837	0.0000	1,278.2682
Waste						0.0000	0.0000		0.0000	0.0000	6.1019	0.0000	6.1019	0.3606	0.0000	15.1172
Water						0.0000	0.0000		0.0000	0.0000	0.9383	22.1334	23.0717	0.0973	2.4600e-003	26.2383
Total	**0.5337**	**2.8796**	**4.1266**	**0.0139**	**0.9330**	**0.0163**	**0.9494**	**0.2501**	**0.0156**	**0.2657**	**7.3801**	**1,398.5747**	**1,405.9548**	**0.5465**	**3.4300e-003**	**1,420.6423**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1307	1.2200e-003	0.0538	5.0000e-005		3.2400e-003	3.2400e-003		3.2400e-003	3.2400e-003	0.3399	0.7077	1.0476	1.0700e-003	2.0000e-005	1.0812
Energy	1.0200e-003	9.1200e-003	6.4500e-003	6.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	99.5572	99.5572	3.8900e-003	9.5000e-004	99.9374
Mobile	0.4020	2.8693	4.0663	0.0138	0.9330	0.0124	0.9454	0.2501	0.0116	0.2617	0.0000	1,276.1764	1,276.1764	0.0837	0.0000	1,278.2682

Waste						0.0000	0.0000		0.0000	0.0000	6.1019	0.0000	6.1019	0.3606	0.0000	15.1172
Water						0.0000	0.0000		0.0000	0.0000	0.9383	22.1334	23.0717	0.0973	2.4600e-003	26.2383
Total	**0.5337**	**2.8796**	**4.1266**	**0.0139**	**0.9330**	**0.0163**	**0.9494**	**0.2501**	**0.0156**	**0.2657**	**7.3801**	**1,398.5747**	**1,405.9548**	**0.5465**	**3.4300e-003**	**1,420.6423**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/20/2018	5/3/2018	5	10	
2	Site Preparation	Site Preparation	5/4/2018	5/4/2018	5	1	
3	Grading	Grading	5/5/2018	5/8/2018	5	2	
4	Building Construction	Building Construction	5/9/2018	9/25/2018	5	100	
5	Paving	Paving	9/26/2018	10/2/2018	5	5	
6	Architectural Coating	Architectural Coating	10/3/2018	10/9/2018	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0.75

Acres of Paving: 0

Residential Indoor: 6,480; Residential Outdoor: 2,160; Non-Residential Indoor: 39,195; Non-Residential Outdoor: 13,065; Striped Parking

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20

Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Graders	1	8.00	187	0.41
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	1	8.00	132	0.36
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	3.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	15.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0124	0.1218	0.0756	1.2000e-004		7.1800e-003	7.1800e-003		6.7100e-003	6.7100e-003	0.0000	10.8462	10.8462	2.7500e-003	0.0000	10.9148
Total	**0.0124**	**0.1218**	**0.0756**	**1.2000e-004**		**7.1800e-003**	**7.1800e-003**		**6.7100e-003**	**6.7100e-003**	**0.0000**	**10.8462**	**10.8462**	**2.7500e-003**	**0.0000**	**10.9148**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	3.2000e-004	3.1700e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6528	0.6528	2.0000e-005	0.0000	0.6533
Total	**3.8000e-004**	**3.2000e-004**	**3.1700e-003**	**1.0000e-005**	**7.1000e-004**	**1.0000e-005**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6528**	**0.6528**	**2.0000e-005**	**0.0000**	**0.6533**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0124	0.1218	0.0756	1.2000e-004		7.1800e-003	7.1800e-003		6.7100e-003	6.7100e-003	0.0000	10.8461	10.8461	2.7500e-003	0.0000	10.9148
Total	**0.0124**	**0.1218**	**0.0756**	**1.2000e-004**		**7.1800e-003**	**7.1800e-003**		**6.7100e-003**	**6.7100e-003**	**0.0000**	**10.8461**	**10.8461**	**2.7500e-003**	**0.0000**	**10.9148**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	3.2000e-004	3.1700e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6528	0.6528	2.0000e-005	0.0000	0.6533
Total	**3.8000e-004**	**3.2000e-004**	**3.1700e-003**	**1.0000e-005**	**7.1000e-004**	**1.0000e-005**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6528**	**0.6528**	**2.0000e-005**	**0.0000**	**0.6533**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.9000e-003	0.0000	2.9000e-003	1.4800e-003	0.0000	1.4800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	9.0000e-004	0.0104	4.0400e-003	1.0000e-005		4.8000e-004	4.8000e-004		4.4000e-004	4.4000e-004	0.0000	0.7872	0.7872	2.5000e-004	0.0000	0.7933
Total	**9.0000e-004**	**0.0104**	**4.0400e-003**	**1.0000e-005**	**2.9000e-003**	**4.8000e-004**	**3.3800e-003**	**1.4800e-003**	**4.4000e-004**	**1.9200e-003**	**0.0000**	**0.7872**	**0.7872**	**2.5000e-004**	**0.0000**	**0.7933**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0402	0.0402	0.0000	0.0000	0.0402
Total	**2.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0402**	**0.0402**	**0.0000**	**0.0000**	**0.0402**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.9000e-003	0.0000	2.9000e-003	1.4800e-003	0.0000	1.4800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-004	0.0104	4.0400e-003	1.0000e-005		4.8000e-004	4.8000e-004		4.4000e-004	4.4000e-004	0.0000	0.7872	0.7872	2.5000e-004	0.0000	0.7933
Total	**9.0000e-004**	**0.0104**	**4.0400e-003**	**1.0000e-005**	**2.9000e-003**	**4.8000e-004**	**3.3800e-003**	**1.4800e-003**	**4.4000e-004**	**1.9200e-003**	**0.0000**	**0.7872**	**0.7872**	**2.5000e-004**	**0.0000**	**0.7933**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0402	0.0402	0.0000	0.0000	0.0402
Total	**2.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0402**	**0.0402**	**0.0000**	**0.0000**	**0.0402**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.9100e-003	0.0000	4.9100e-003	2.5300e-003	0.0000	2.5300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5000e-003	0.0171	6.7600e-003	1.0000e-005		7.9000e-004	7.9000e-004		7.3000e-004	7.3000e-004	0.0000	1.2894	1.2894	4.0000e-004	0.0000	1.2994
Total	**1.5000e-003**	**0.0171**	**6.7600e-003**	**1.0000e-005**	**4.9100e-003**	**7.9000e-004**	**5.7000e-003**	**2.5300e-003**	**7.3000e-004**	**3.2600e-003**	**0.0000**	**1.2894**	**1.2894**	**4.0000e-004**	**0.0000**	**1.2994**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	4.0000e-005	3.9000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0803	0.0803	0.0000	0.0000	0.0804
Total	**5.0000e-005**	**4.0000e-005**	**3.9000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0803**	**0.0803**	**0.0000**	**0.0000**	**0.0804**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.9100e-003	0.0000	4.9100e-003	2.5300e-003	0.0000	2.5300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5000e-003	0.0171	6.7600e-003	1.0000e-005		7.9000e-004	7.9000e-004		7.3000e-004	7.3000e-004	0.0000	1.2893	1.2893	4.0000e-004	0.0000	1.2994
Total	**1.5000e-003**	**0.0171**	**6.7600e-003**	**1.0000e-005**	**4.9100e-003**	**7.9000e-004**	**5.7000e-003**	**2.5300e-003**	**7.3000e-004**	**3.2600e-003**	**0.0000**	**1.2893**	**1.2893**	**4.0000e-004**	**0.0000**	**1.2994**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	5.0000e-005	4.0000e-005	3.9000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0803	0.0803	0.0000	0.0000	0.0804
Total	**5.0000e-005**	**4.0000e-005**	**3.9000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0803**	**0.0803**	**0.0000**	**0.0000**	**0.0804**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1296	0.8714	0.6938	1.1000e-003		0.0529	0.0529		0.0511	0.0511	0.0000	92.1173	92.1173	0.0185	0.0000	92.5809
Total	**0.1296**	**0.8714**	**0.6938**	**1.1000e-003**		**0.0529**	**0.0529**		**0.0511**	**0.0511**	**0.0000**	**92.1173**	**92.1173**	**0.0185**	**0.0000**	**92.5809**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2300e-003	0.0374	8.4900e-003	8.0000e-005	1.8900e-003	2.6000e-004	2.1500e-003	5.5000e-004	2.5000e-004	7.9000e-004	0.0000	7.7909	7.7909	5.7000e-004	0.0000	7.8051
Worker	4.4300e-003	3.7300e-003	0.0365	8.0000e-005	8.2200e-003	6.0000e-005	8.2800e-003	2.1800e-003	5.0000e-005	2.2400e-003	0.0000	7.5317	7.5317	2.7000e-004	0.0000	7.5385
Total	**5.6600e-003**	**0.0411**	**0.0450**	**1.6000e-004**	**0.0101**	**3.2000e-004**	**0.0104**	**2.7300e-003**	**3.0000e-004**	**3.0300e-003**	**0.0000**	**15.3226**	**15.3226**	**8.4000e-004**	**0.0000**	**15.3436**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1296	0.8714	0.6938	1.1000e-003		0.0529	0.0529		0.0511	0.0511	0.0000	92.1172	92.1172	0.0185	0.0000	92.5808
Total	**0.1296**	**0.8714**	**0.6938**	**1.1000e-003**		**0.0529**	**0.0529**		**0.0511**	**0.0511**	**0.0000**	**92.1172**	**92.1172**	**0.0185**	**0.0000**	**92.5808**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2300e-003	0.0374	8.4900e-003	8.0000e-005	1.8900e-003	2.6000e-004	2.1500e-003	5.5000e-004	2.5000e-004	7.9000e-004	0.0000	7.7909	7.7909	5.7000e-004	0.0000	7.8051
Worker	4.4300e-003	3.7300e-003	0.0365	8.0000e-005	8.2200e-003	6.0000e-005	8.2800e-003	2.1800e-003	5.0000e-005	2.2400e-003	0.0000	7.5317	7.5317	2.7000e-004	0.0000	7.5385
Total	**5.6600e-003**	**0.0411**	**0.0450**	**1.6000e-004**	**0.0101**	**3.2000e-004**	**0.0104**	**2.7300e-003**	**3.0000e-004**	**3.0300e-003**	**0.0000**	**15.3226**	**15.3226**	**8.4000e-004**	**0.0000**	**15.3436**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Off-Road	2.5500e-003	0.0261	0.0225	3.0000e-005		1.5200e-003	1.5200e-003		1.4000e-003	1.4000e-003	0.0000	3.0537	3.0537	9.3000e-004	0.0000	3.0770
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.5500e-003**	**0.0261**	**0.0225**	**3.0000e-005**		**1.5200e-003**	**1.5200e-003**		**1.4000e-003**	**1.4000e-003**	**0.0000**	**3.0537**	**3.0537**	**9.3000e-004**	**0.0000**	**3.0770**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.6000e-004	1.5800e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3264	0.3264	1.0000e-005	0.0000	0.3267
Total	**1.9000e-004**	**1.6000e-004**	**1.5800e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3264**	**0.3264**	**1.0000e-005**	**0.0000**	**0.3267**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.5500e-003	0.0261	0.0225	3.0000e-005		1.5200e-003	1.5200e-003		1.4000e-003	1.4000e-003	0.0000	3.0537	3.0537	9.3000e-004	0.0000	3.0770
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**2.5500e-003**	**0.0261**	**0.0225**	**3.0000e-005**		**1.5200e-003**	**1.5200e-003**		**1.4000e-003**	**1.4000e-003**	**0.0000**	**3.0537**	**3.0537**	**9.3000e-004**	**0.0000**	**3.0770**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.6000e-004	1.5800e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3264	0.3264	1.0000e-005	0.0000	0.3267
Total	**1.9000e-004**	**1.6000e-004**	**1.5800e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3264**	**0.3264**	**1.0000e-005**	**0.0000**	**0.3267**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1311					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5000e-004	5.0100e-003	4.6400e-003	1.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	0.6383	0.6383	6.0000e-005	0.0000	0.6398
Total	**0.1319**	**5.0100e-003**	**4.6400e-003**	**1.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**0.6383**	**0.6383**	**6.0000e-005**	**0.0000**	**0.6398**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	4.0000e-005	3.7000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0753	0.0753	0.0000	0.0000	0.0754
Total	**4.0000e-005**	**4.0000e-005**	**3.7000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0753**	**0.0753**	**0.0000**	**0.0000**	**0.0754**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1311					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5000e-004	5.0100e-003	4.6400e-003	1.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	0.6383	0.6383	6.0000e-005	0.0000	0.6398
Total	**0.1319**	**5.0100e-003**	**4.6400e-003**	**1.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**0.6383**	**0.6383**	**6.0000e-005**	**0.0000**	**0.6398**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	4.0000e-005	3.7000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0753	0.0753	0.0000	0.0000	0.0754
Total	**4.0000e-005**	**4.0000e-005**	**3.7000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0753**	**0.0753**	**0.0000**	**0.0000**	**0.0754**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4020	2.8693	4.0663	0.0138	0.9330	0.0124	0.9454	0.2501	0.0116	0.2617	0.0000	1,276.1764	1,276.1764	0.0837	0.0000	1,278.2682
Unmitigated	0.4020	2.8693	4.0663	0.0138	0.9330	0.0124	0.9454	0.2501	0.0116	0.2617	0.0000	1,276.1764	1,276.1764	0.0837	0.0000	1,278.2682

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.38	4.55	3.35	4,024	4,024
Apartments Low Rise	21.09	22.91	19.42	72,139	72,139
Day-Care Center	645.06	54.09	50.78	691,763	691,763
Government Office Building	600.38	0.00	0.00	1,009,825	1,009,825
Strip Mall	386.03	366.17	177.95	672,499	672,499
Total	1,652.94	447.72	251.50	2,450,250	2,450,250

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Day-Care Center	16.60	8.40	6.90	12.70	82.30	5.00	28	58	14
Government Office Building	16.60	8.40	6.90	33.00	62.00	5.00	50	34	16
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082
Day-Care Center	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082
Government Office Building	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082
Strip Mall	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082
City Park	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	89.4268	89.4268	3.6900e-003	7.6000e-004	89.7467
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	89.4268	89.4268	3.6900e-003	7.6000e-004	89.7467

NaturalGas Mitigated	1.0200e-003	9.1200e-003	6.4500e-003	6.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	10.1305	10.1305	1.9000e-004	1.9000e-004	10.1907
NaturalGas Unmitigated	1.0200e-003	9.1200e-003	6.4500e-003	6.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	10.1305	10.1305	1.9000e-004	1.9000e-004	10.1907

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	63368.7	3.4000e-004	2.9200e-003	1.2400e-003	2.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	3.3816	3.3816	6.0000e-005	6.0000e-005	3.4017
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Day-Care Center	76648	4.1000e-004	3.7600e-003	3.1600e-003	2.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	4.0902	4.0902	8.0000e-005	7.0000e-005	4.1145
Government Office Building	30397.9	1.6000e-004	1.4900e-003	1.2500e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.6222	1.6222	3.0000e-005	3.0000e-005	1.6318
Strip Mall	19423.3	1.0000e-004	9.5000e-004	8.0000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	1.0365	1.0365	2.0000e-005	2.0000e-005	1.0427
Total		**1.0100e-003**	**9.1200e-003**	**6.4500e-003**	**6.0000e-005**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**10.1305**	**10.1305**	**1.9000e-004**	**1.8000e-004**	**10.1907**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	63368.7	3.4000e-004	2.9200e-003	1.2400e-003	2.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	3.3816	3.3816	6.0000e-005	6.0000e-005	3.4017
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Day-Care Center	76648	4.1000e-004	3.7600e-003	3.1600e-003	2.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	4.0902	4.0902	8.0000e-005	7.0000e-005	4.1145

Government Office Building	30397.9	1.6000e-004	1.4900e-003	1.2500e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.6222	1.6222	3.0000e-005	3.0000e-005	1.6318
Strip Mall	19423.3	1.0000e-004	9.5000e-004	8.0000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	1.0365	1.0365	2.0000e-005	2.0000e-005	1.0427
Total		**1.0100e-003**	**9.1200e-003**	**6.4500e-003**	**6.0000e-005**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**10.1305**	**10.1305**	**1.9000e-004**	**1.8000e-004**	**10.1907**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	16841.9	5.3662	2.2000e-004	5.0000e-005	5.3854
City Park	0	0.0000	0.0000	0.0000	0.0000
Day-Care Center	65499.2	20.8695	8.6000e-004	1.8000e-004	20.9441
Government Office Building	85009.6	27.0859	1.1200e-003	2.3000e-004	27.1828
Strip Mall	113317	36.1053	1.4900e-003	3.1000e-004	36.2344
Total		**89.4268**	**3.6900e-003**	**7.7000e-004**	**89.7467**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	16841.9	5.3662	2.2000e-004	5.0000e-005	5.3854
City Park	0	0.0000	0.0000	0.0000	0.0000

Day-Care Center	65499.2	20.8695	8.6000e-004	1.8000e-004	20.9441
Government Office Building	85009.6	27.0859	1.1200e-003	2.3000e-004	27.1828
Strip Mall	113317	36.1053	1.4900e-003	3.1000e-004	36.2344
Total		**89.4268**	**3.6900e-003**	**7.7000e-004**	**89.7467**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1307	1.2200e-003	0.0538	5.0000e-005		3.2400e-003	3.2400e-003		3.2400e-003	3.2400e-003	0.3399	0.7077	1.0476	1.0700e-003	2.0000e-005	1.0812
Unmitigated	0.1307	1.2200e-003	0.0538	5.0000e-005		3.2400e-003	3.2400e-003		3.2400e-003	3.2400e-003	0.3399	0.7077	1.0476	1.0700e-003	2.0000e-005	1.0812

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0131					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Consumer Products	0.1061					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0105	8.3000e-004	0.0203	5.0000e-005		3.0600e-003	3.0600e-003		3.0600e-003	3.0600e-003	0.3399	0.6532	0.9931	1.0100e-003	2.0000e-005	1.0253
Landscaping	1.0400e-003	3.9000e-004	0.0335	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0546	0.0546	5.0000e-005	0.0000	0.0559
Total	**0.1307**	**1.2200e-003**	**0.0538**	**5.0000e-005**		**3.2400e-003**	**3.2400e-003**		**3.2400e-003**	**3.2400e-003**	**0.3399**	**0.7077**	**1.0476**	**1.0600e-003**	**2.0000e-005**	**1.0812**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0131					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1061					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0105	8.3000e-004	0.0203	5.0000e-005		3.0600e-003	3.0600e-003		3.0600e-003	3.0600e-003	0.3399	0.6532	0.9931	1.0100e-003	2.0000e-005	1.0253
Landscaping	1.0400e-003	3.9000e-004	0.0335	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0546	0.0546	5.0000e-005	0.0000	0.0559
Total	**0.1307**	**1.2200e-003**	**0.0538**	**5.0000e-005**		**3.2400e-003**	**3.2400e-003**		**3.2400e-003**	**3.2400e-003**	**0.3399**	**0.7077**	**1.0476**	**1.0600e-003**	**2.0000e-005**	**1.0812**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			

Mitigated	23.0717	0.0973	2.4600e-003	26.2383
Unmitigated	23.0717	0.0973	2.4600e-003	26.2383

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	0.208493 / 0.131441	1.3964	6.8500e-003	1.7000e-004	1.6188
City Park	0 / 0.238296	0.8435	3.0000e-005	1.0000e-005	0.8466
Day-Care Center	0.373568 / 0.960604	5.0688	0.0124	3.3000e-004	5.4765
Government Office Building	1.73033 / 1.06052	11.4818	0.0568	1.4200e-003	13.3272
Strip Mall	0.645172 / 0.395428	4.2811	0.0212	5.3000e-004	4.9692
Total		**23.0717**	**0.0973**	**2.4600e-003**	**26.2383**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	0.208493 / 0.131441	1.3964	6.8500e-003	1.7000e-004	1.6188
City Park	0 / 0.238296	0.8435	3.0000e-005	1.0000e-005	0.8466

Day-Care Center	0.373568 / 0.960604	5.0688	0.0124	3.3000e-004	5.4765
Government Office Building	1.73033 / 1.06052	11.4818	0.0568	1.4200e-003	13.3272
Strip Mall	0.645172 / 0.395428	4.2811	0.0212	5.3000e-004	4.9692
Total		**23.0717**	**0.0973**	**2.4600e-003**	**26.2383**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	6.1019	0.3606	0.0000	15.1172
Unmitigated	6.1019	0.3606	0.0000	15.1172

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	1.47	0.2984	0.0176	0.0000	0.7393

City Park	0.02	4.0600e-003	2.4000e-004	0.0000	0.0101
Day-Care Center	11.32	2.2979	0.1358	0.0000	5.6929
Government Office Building	8.1	1.6442	0.0972	0.0000	4.0735
Strip Mall	9.15	1.8574	0.1098	0.0000	4.6016
Total		**6.1019**	**0.3606**	**0.0000**	**15.1172**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	1.47	0.2984	0.0176	0.0000	0.7393
City Park	0.02	4.0600e-003	2.4000e-004	0.0000	0.0101
Day-Care Center	11.32	2.2979	0.1358	0.0000	5.6929
Government Office Building	8.1	1.6442	0.0972	0.0000	4.0735
Strip Mall	9.15	1.8574	0.1098	0.0000	4.6016
Total		**6.1019**	**0.3606**	**0.0000**	**15.1172**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Fontana GP - San Bernardino-South Coast County, Annual

Fontana General Plan Update

San Bernardino-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	OperationalYear	2018	2020

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.1552	1.1005	0.8669	1.5000e-003	0.0212	0.0636	0.0848	7.6100e-003	0.0611	0.0687	0.0000	128.0593	128.0593	0.0240	0.0000	128.6585
Maximum	**0.1552**	**1.1005**	**0.8669**	**1.5000e-003**	**0.0212**	**0.0636**	**0.0848**	**7.6100e-003**	**0.0611**	**0.0687**	**0.0000**	**128.0593**	**128.0593**	**0.0240**	**0.0000**	**128.6585**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.1552	1.1005	0.8669	1.5000e-003	0.0212	0.0636	0.0848	7.6100e-003	0.0611	0.0687	0.0000	128.0592	128.0592	0.0240	0.0000	128.6584
Maximum	**0.1552**	**1.1005**	**0.8669**	**1.5000e-003**	**0.0212**	**0.0636**	**0.0848**	**7.6100e-003**	**0.0611**	**0.0687**	**0.0000**	**128.0592**	**128.0592**	**0.0240**	**0.0000**	**128.6584**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)

1	**4-20-2018**	**7-19-2018**	0.7124	0.7124
2	**7-20-2018**	**9-30-2018**	0.5333	0.5333
		Highest	0.7124	0.7124

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.5100e-003	0.0186	0.0299	1.1000e-004	7.6600e-003	1.0000e-004	7.7600e-003	2.0500e-003	9.0000e-005	2.1400e-003	0.0000	9.8317	9.8317	5.6000e-004	0.0000	9.8457
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	4.2177	4.2177	1.7000e-004	4.0000e-005	4.2328
Total	**2.9200e-003**	**0.0186**	**0.0299**	**1.1000e-004**	**7.6600e-003**	**1.0000e-004**	**7.7600e-003**	**2.0500e-003**	**9.0000e-005**	**2.1400e-003**	**0.0183**	**14.0495**	**14.0677**	**1.8100e-003**	**4.0000e-005**	**14.1238**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.5100e-003	0.0186	0.0299	1.1000e-004	7.6600e-003	1.0000e-004	7.7600e-003	2.0500e-003	9.0000e-005	2.1400e-003	0.0000	9.8317	9.8317	5.6000e-004	0.0000	9.8457

Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	4.2177	4.2177	1.7000e-004	4.0000e-005	4.2328
Total	**2.9200e-003**	**0.0186**	**0.0299**	**1.1000e-004**	**7.6600e-003**	**1.0000e-004**	**7.7600e-003**	**2.0500e-003**	**9.0000e-005**	**2.1400e-003**	**0.0183**	**14.0495**	**14.0677**	**1.8100e-003**	**4.0000e-005**	**14.1238**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/20/2018	5/3/2018	5	10	
2	Site Preparation	Site Preparation	5/4/2018	5/4/2018	5	1	
3	Grading	Grading	5/5/2018	5/8/2018	5	2	
4	Building Construction	Building Construction	5/9/2018	9/25/2018	5	100	
5	Paving	Paving	9/26/2018	10/2/2018	5	5	
6	Architectural Coating	Architectural Coating	10/3/2018	10/9/2018	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0.75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20

Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Graders	1	8.00	187	0.41
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	1	8.00	132	0.36
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	18.00	7.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0124	0.1218	0.0756	1.2000e-004		7.1800e-003	7.1800e-003		6.7100e-003	6.7100e-003	0.0000	10.8462	10.8462	2.7500e-003	0.0000	10.9148
Total	**0.0124**	**0.1218**	**0.0756**	**1.2000e-004**		**7.1800e-003**	**7.1800e-003**		**6.7100e-003**	**6.7100e-003**	**0.0000**	**10.8462**	**10.8462**	**2.7500e-003**	**0.0000**	**10.9148**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	3.2000e-004	3.1700e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6528	0.6528	2.0000e-005	0.0000	0.6533
Total	**3.8000e-004**	**3.2000e-004**	**3.1700e-003**	**1.0000e-005**	**7.1000e-004**	**1.0000e-005**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6528**	**0.6528**	**2.0000e-005**	**0.0000**	**0.6533**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0124	0.1218	0.0756	1.2000e-004		7.1800e-003	7.1800e-003		6.7100e-003	6.7100e-003	0.0000	10.8461	10.8461	2.7500e-003	0.0000	10.9148
Total	**0.0124**	**0.1218**	**0.0756**	**1.2000e-004**		**7.1800e-003**	**7.1800e-003**		**6.7100e-003**	**6.7100e-003**	**0.0000**	**10.8461**	**10.8461**	**2.7500e-003**	**0.0000**	**10.9148**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	3.2000e-004	3.1700e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6528	0.6528	2.0000e-005	0.0000	0.6533
Total	**3.8000e-004**	**3.2000e-004**	**3.1700e-003**	**1.0000e-005**	**7.1000e-004**	**1.0000e-005**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6528**	**0.6528**	**2.0000e-005**	**0.0000**	**0.6533**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.9000e-003	0.0000	2.9000e-003	1.4800e-003	0.0000	1.4800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	9.0000e-004	0.0104	4.0400e-003	1.0000e-005		4.8000e-004	4.8000e-004		4.4000e-004	4.4000e-004	0.0000	0.7872	0.7872	2.5000e-004	0.0000	0.7933
Total	**9.0000e-004**	**0.0104**	**4.0400e-003**	**1.0000e-005**	**2.9000e-003**	**4.8000e-004**	**3.3800e-003**	**1.4800e-003**	**4.4000e-004**	**1.9200e-003**	**0.0000**	**0.7872**	**0.7872**	**2.5000e-004**	**0.0000**	**0.7933**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0402	0.0402	0.0000	0.0000	0.0402
Total	**2.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0402**	**0.0402**	**0.0000**	**0.0000**	**0.0402**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.9000e-003	0.0000	2.9000e-003	1.4800e-003	0.0000	1.4800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-004	0.0104	4.0400e-003	1.0000e-005		4.8000e-004	4.8000e-004		4.4000e-004	4.4000e-004	0.0000	0.7872	0.7872	2.5000e-004	0.0000	0.7933
Total	**9.0000e-004**	**0.0104**	**4.0400e-003**	**1.0000e-005**	**2.9000e-003**	**4.8000e-004**	**3.3800e-003**	**1.4800e-003**	**4.4000e-004**	**1.9200e-003**	**0.0000**	**0.7872**	**0.7872**	**2.5000e-004**	**0.0000**	**0.7933**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0402	0.0402	0.0000	0.0000	0.0402
Total	**2.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0402**	**0.0402**	**0.0000**	**0.0000**	**0.0402**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.9100e-003	0.0000	4.9100e-003	2.5300e-003	0.0000	2.5300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5000e-003	0.0171	6.7600e-003	1.0000e-005		7.9000e-004	7.9000e-004		7.3000e-004	7.3000e-004	0.0000	1.2894	1.2894	4.0000e-004	0.0000	1.2994
Total	**1.5000e-003**	**0.0171**	**6.7600e-003**	**1.0000e-005**	**4.9100e-003**	**7.9000e-004**	**5.7000e-003**	**2.5300e-003**	**7.3000e-004**	**3.2600e-003**	**0.0000**	**1.2894**	**1.2894**	**4.0000e-004**	**0.0000**	**1.2994**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	4.0000e-005	3.9000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0803	0.0803	0.0000	0.0000	0.0804
Total	**5.0000e-005**	**4.0000e-005**	**3.9000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0803**	**0.0803**	**0.0000**	**0.0000**	**0.0804**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.9100e-003	0.0000	4.9100e-003	2.5300e-003	0.0000	2.5300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5000e-003	0.0171	6.7600e-003	1.0000e-005		7.9000e-004	7.9000e-004		7.3000e-004	7.3000e-004	0.0000	1.2893	1.2893	4.0000e-004	0.0000	1.2994
Total	**1.5000e-003**	**0.0171**	**6.7600e-003**	**1.0000e-005**	**4.9100e-003**	**7.9000e-004**	**5.7000e-003**	**2.5300e-003**	**7.3000e-004**	**3.2600e-003**	**0.0000**	**1.2893**	**1.2893**	**4.0000e-004**	**0.0000**	**1.2994**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	5.0000e-005	4.0000e-005	3.9000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0803	0.0803	0.0000	0.0000	0.0804
Total	**5.0000e-005**	**4.0000e-005**	**3.9000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0803**	**0.0803**	**0.0000**	**0.0000**	**0.0804**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1296	0.8714	0.6938	1.1000e-003		0.0529	0.0529		0.0511	0.0511	0.0000	92.1173	92.1173	0.0185	0.0000	92.5809
Total	**0.1296**	**0.8714**	**0.6938**	**1.1000e-003**		**0.0529**	**0.0529**		**0.0511**	**0.0511**	**0.0000**	**92.1173**	**92.1173**	**0.0185**	**0.0000**	**92.5809**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4400e-003	0.0436	9.9000e-003	1.0000e-004	2.2100e-003	3.0000e-004	2.5100e-003	6.4000e-004	2.9000e-004	9.2000e-004	0.0000	9.0893	9.0893	6.6000e-004	0.0000	9.1059
Worker	5.3100e-003	4.4800e-003	0.0438	1.0000e-004	9.8700e-003	7.0000e-005	9.9400e-003	2.6200e-003	6.0000e-005	2.6900e-003	0.0000	9.0380	9.0380	3.3000e-004	0.0000	9.0462
Total	**6.7500e-003**	**0.0481**	**0.0537**	**2.0000e-004**	**0.0121**	**3.7000e-004**	**0.0125**	**3.2600e-003**	**3.5000e-004**	**3.6100e-003**	**0.0000**	**18.1274**	**18.1274**	**9.9000e-004**	**0.0000**	**18.1522**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1296	0.8714	0.6938	1.1000e-003		0.0529	0.0529		0.0511	0.0511	0.0000	92.1172	92.1172	0.0185	0.0000	92.5808
Total	**0.1296**	**0.8714**	**0.6938**	**1.1000e-003**		**0.0529**	**0.0529**		**0.0511**	**0.0511**	**0.0000**	**92.1172**	**92.1172**	**0.0185**	**0.0000**	**92.5808**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4400e-003	0.0436	9.9000e-003	1.0000e-004	2.2100e-003	3.0000e-004	2.5100e-003	6.4000e-004	2.9000e-004	9.2000e-004	0.0000	9.0893	9.0893	6.6000e-004	0.0000	9.1059
Worker	5.3100e-003	4.4800e-003	0.0438	1.0000e-004	9.8700e-003	7.0000e-005	9.9400e-003	2.6200e-003	6.0000e-005	2.6900e-003	0.0000	9.0380	9.0380	3.3000e-004	0.0000	9.0462
Total	**6.7500e-003**	**0.0481**	**0.0537**	**2.0000e-004**	**0.0121**	**3.7000e-004**	**0.0125**	**3.2600e-003**	**3.5000e-004**	**3.6100e-003**	**0.0000**	**18.1274**	**18.1274**	**9.9000e-004**	**0.0000**	**18.1522**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Off-Road	2.5500e-003	0.0261	0.0225	3.0000e-005		1.5200e-003	1.5200e-003		1.4000e-003	1.4000e-003	0.0000	3.0537	3.0537	9.3000e-004	0.0000	3.0770
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.5500e-003**	**0.0261**	**0.0225**	**3.0000e-005**		**1.5200e-003**	**1.5200e-003**		**1.4000e-003**	**1.4000e-003**	**0.0000**	**3.0537**	**3.0537**	**9.3000e-004**	**0.0000**	**3.0770**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.6000e-004	1.5800e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3264	0.3264	1.0000e-005	0.0000	0.3267
Total	**1.9000e-004**	**1.6000e-004**	**1.5800e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3264**	**0.3264**	**1.0000e-005**	**0.0000**	**0.3267**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.5500e-003	0.0261	0.0225	3.0000e-005		1.5200e-003	1.5200e-003		1.4000e-003	1.4000e-003	0.0000	3.0537	3.0537	9.3000e-004	0.0000	3.0770
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**2.5500e-003**	**0.0261**	**0.0225**	**3.0000e-005**		**1.5200e-003**	**1.5200e-003**		**1.4000e-003**	**1.4000e-003**	**0.0000**	**3.0537**	**3.0537**	**9.3000e-004**	**0.0000**	**3.0770**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.6000e-004	1.5800e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3264	0.3264	1.0000e-005	0.0000	0.3267
Total	**1.9000e-004**	**1.6000e-004**	**1.5800e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3264**	**0.3264**	**1.0000e-005**	**0.0000**	**0.3267**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5000e-004	5.0100e-003	4.6400e-003	1.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	0.6383	0.6383	6.0000e-005	0.0000	0.6398
Total	**7.5000e-004**	**5.0100e-003**	**4.6400e-003**	**1.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**0.6383**	**0.6383**	**6.0000e-005**	**0.0000**	**0.6398**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	5.0000e-005	4.9000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1004	0.1004	0.0000	0.0000	0.1005
Total	**6.0000e-005**	**5.0000e-005**	**4.9000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1004**	**0.1004**	**0.0000**	**0.0000**	**0.1005**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5000e-004	5.0100e-003	4.6400e-003	1.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	0.6383	0.6383	6.0000e-005	0.0000	0.6398
Total	**7.5000e-004**	**5.0100e-003**	**4.6400e-003**	**1.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**0.6383**	**0.6383**	**6.0000e-005**	**0.0000**	**0.6398**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	5.0000e-005	4.9000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1004	0.1004	0.0000	0.0000	0.1005
Total	**6.0000e-005**	**5.0000e-005**	**4.9000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1004**	**0.1004**	**0.0000**	**0.0000**	**0.1005**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.5100e-003	0.0186	0.0299	1.1000e-004	7.6600e-003	1.0000e-004	7.7600e-003	2.0500e-003	9.0000e-005	2.1400e-003	0.0000	9.8317	9.8317	5.6000e-004	0.0000	9.8457
Unmitigated	2.5100e-003	0.0186	0.0299	1.1000e-004	7.6600e-003	1.0000e-004	7.7600e-003	2.0500e-003	9.0000e-005	2.1400e-003	0.0000	9.8317	9.8317	5.6000e-004	0.0000	9.8457

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	20,118	20,118
Total	1.89	22.75	16.74	20,118	20,118

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by

City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					

City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	4.2177	1.7000e-004	4.0000e-005	4.2328
Unmitigated	4.2177	1.7000e-004	4.0000e-005	4.2328

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	4.2177	1.7000e-004	4.0000e-005	4.2328
Total		**4.2177**	**1.7000e-004**	**4.0000e-005**	**4.2328**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	4.2177	1.7000e-004	4.0000e-005	4.2328
Total		**4.2177**	**1.7000e-004**	**4.0000e-005**	**4.2328**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Fontana GP - San Bernardino-South Coast County, Annual

Fontana GP

San Bernardino-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High Turnover (Sit Down Restaurant)	14.52	1000sqft	0.33	14,520.00	0
Government Office Building	14.52	1000sqft	0.33	14,520.00	0
Parking Lot	14.52	1000sqft	0.33	14,520.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	OperationalYear	2018	2020

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.2083	0.6883	0.5160	8.8000e-004	0.0138	0.0414	0.0552	3.8900e-003	0.0383	0.0422	0.0000	80.6619	80.6619	0.0193	0.0000	81.1448
Maximum	**0.2083**	**0.6883**	**0.5160**	**8.8000e-004**	**0.0138**	**0.0414**	**0.0552**	**3.8900e-003**	**0.0383**	**0.0422**	**0.0000**	**80.6619**	**80.6619**	**0.0193**	**0.0000**	**81.1448**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.2083	0.6883	0.5160	8.8000e-004	0.0138	0.0414	0.0552	3.8900e-003	0.0383	0.0422	0.0000	80.6619	80.6619	0.0193	0.0000	81.1448
Maximum	**0.2083**	**0.6883**	**0.5160**	**8.8000e-004**	**0.0138**	**0.0414**	**0.0552**	**3.8900e-003**	**0.0383**	**0.0422**	**0.0000**	**80.6619**	**80.6619**	**0.0193**	**0.0000**	**81.1448**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**4-20-2018**	**7-19-2018**	0.4111	0.4111
2	**7-20-2018**	**9-30-2018**	0.3382	0.3382
		Highest	0.4111	0.4111

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1196	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	0.0217	0.1974	0.1658	1.1800e-003		0.0150	0.0150		0.0150	0.0150	0.0000	487.5121	487.5121	0.0154	6.2700e-003	489.7644
Mobile	0.7929	5.5819	7.5242	0.0249	1.6378	0.0223	1.6600	0.4390	0.0209	0.4599	0.0000	2,311.2929	2,311.2929	0.1608	0.0000	2,315.3137
Waste						0.0000	0.0000		0.0000	0.0000	37.8152	0.0000	37.8152	2.2348	0.0000	93.6855
Water						0.0000	0.0000		0.0000	0.0000	2.3134	37.5063	39.8197	0.2392	5.9300e-003	47.5659
Total	**0.9342**	**5.7793**	**7.6906**	**0.0261**	**1.6378**	**0.0373**	**1.6750**	**0.4390**	**0.0359**	**0.4749**	**40.1286**	**2,836.3124**	**2,876.4409**	**2.6502**	**0.0122**	**2,946.3306**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1196	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	0.0217	0.1974	0.1658	1.1800e-003		0.0150	0.0150		0.0150	0.0150	0.0000	487.5121	487.5121	0.0154	6.2700e-003	489.7644
Mobile	0.7929	5.5819	7.5242	0.0249	1.6378	0.0223	1.6600	0.4390	0.0209	0.4599	0.0000	2,311.2929	2,311.2929	0.1608	0.0000	2,315.3137
Waste						0.0000	0.0000		0.0000	0.0000	37.8152	0.0000	37.8152	2.2348	0.0000	93.6855
Water						0.0000	0.0000		0.0000	0.0000	2.3134	37.5063	39.8197	0.2392	5.9300e-003	47.5659

Total	**0.9342**	**5.7793**	**7.6906**	**0.0261**	**1.6378**	**0.0373**	**1.6750**	**0.4390**	**0.0359**	**0.4749**	**40.1286**	**2,836.3124**	**2,876.4409**	**2.6502**	**0.0122**	**2,946.3306**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/20/2018	5/3/2018	5	10	
2	Site Preparation	Site Preparation	5/4/2018	5/4/2018	5	1	
3	Grading	Grading	5/5/2018	5/8/2018	5	2	
4	Building Construction	Building Construction	5/9/2018	9/25/2018	5	100	
5	Paving	Paving	9/26/2018	10/2/2018	5	5	
6	Architectural Coating	Architectural Coating	10/3/2018	10/9/2018	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.33

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 43,560; Non-Residential Outdoor: 14,520; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73

Site Preparation	Graders	1	8.00	187	0.41
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	3.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	17.00	7.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	5.3200e-003	0.0472	0.0389	6.0000e-005		3.1100e-003	3.1100e-003		2.9700e-003	2.9700e-003	0.0000	5.3041	5.3041	1.0200e-003	0.0000	5.3297
Total	**5.3200e-003**	**0.0472**	**0.0389**	**6.0000e-005**		**3.1100e-003**	**3.1100e-003**		**2.9700e-003**	**2.9700e-003**	**0.0000**	**5.3041**	**5.3041**	**1.0200e-003**	**0.0000**	**5.3297**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.5000e-004	2.4400e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5021	0.5021	2.0000e-005	0.0000	0.5026
Total	**3.0000e-004**	**2.5000e-004**	**2.4400e-003**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**5.5000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.5021**	**0.5021**	**2.0000e-005**	**0.0000**	**0.5026**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.3200e-003	0.0472	0.0389	6.0000e-005		3.1100e-003	3.1100e-003		2.9700e-003	2.9700e-003	0.0000	5.3041	5.3041	1.0200e-003	0.0000	5.3296
Total	**5.3200e-003**	**0.0472**	**0.0389**	**6.0000e-005**		**3.1100e-003**	**3.1100e-003**		**2.9700e-003**	**2.9700e-003**	**0.0000**	**5.3041**	**5.3041**	**1.0200e-003**	**0.0000**	**5.3296**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.5000e-004	2.4400e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5021	0.5021	2.0000e-005	0.0000	0.5026
Total	**3.0000e-004**	**2.5000e-004**	**2.4400e-003**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**5.5000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.5021**	**0.5021**	**2.0000e-005**	**0.0000**	**0.5026**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9000e-004	4.8800e-003	2.1300e-003	0.0000		2.1000e-004	2.1000e-004		1.9000e-004	1.9000e-004	0.0000	0.4458	0.4458	1.4000e-004	0.0000	0.4492
Total	**3.9000e-004**	**4.8800e-003**	**2.1300e-003**	**0.0000**	**2.7000e-004**	**2.1000e-004**	**4.8000e-004**	**3.0000e-005**	**1.9000e-004**	**2.2000e-004**	**0.0000**	**0.4458**	**0.4458**	**1.4000e-004**	**0.0000**	**0.4492**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.2000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0251	0.0251	0.0000	0.0000	0.0251
Total	**1.0000e-005**	**1.0000e-005**	**1.2000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0251**	**0.0251**	**0.0000**	**0.0000**	**0.0251**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9000e-004	4.8800e-003	2.1300e-003	0.0000		2.1000e-004	2.1000e-004		1.9000e-004	1.9000e-004	0.0000	0.4458	0.4458	1.4000e-004	0.0000	0.4492
Total	**3.9000e-004**	**4.8800e-003**	**2.1300e-003**	**0.0000**	**2.7000e-004**	**2.1000e-004**	**4.8000e-004**	**3.0000e-005**	**1.9000e-004**	**2.2000e-004**	**0.0000**	**0.4458**	**0.4458**	**1.4000e-004**	**0.0000**	**0.4492**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.2000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0251	0.0251	0.0000	0.0000	0.0251
Total	**1.0000e-005**	**1.0000e-005**	**1.2000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0251**	**0.0251**	**0.0000**	**0.0000**	**0.0251**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0600e-003	9.4300e-003	7.7800e-003	1.0000e-005		6.2000e-004	6.2000e-004		5.9000e-004	5.9000e-004	0.0000	1.0608	1.0608	2.0000e-004	0.0000	1.0659
Total	**1.0600e-003**	**9.4300e-003**	**7.7800e-003**	**1.0000e-005**	**7.5000e-004**	**6.2000e-004**	**1.3700e-003**	**4.1000e-004**	**5.9000e-004**	**1.0000e-003**	**0.0000**	**1.0608**	**1.0608**	**2.0000e-004**	**0.0000**	**1.0659**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	5.0000e-005	4.9000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1004	0.1004	0.0000	0.0000	0.1005
Total	**6.0000e-005**	**5.0000e-005**	**4.9000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1004**	**0.1004**	**0.0000**	**0.0000**	**0.1005**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0600e-003	9.4300e-003	7.7800e-003	1.0000e-005		6.2000e-004	6.2000e-004		5.9000e-004	5.9000e-004	0.0000	1.0608	1.0608	2.0000e-004	0.0000	1.0659
Total	**1.0600e-003**	**9.4300e-003**	**7.7800e-003**	**1.0000e-005**	**7.5000e-004**	**6.2000e-004**	**1.3700e-003**	**4.1000e-004**	**5.9000e-004**	**1.0000e-003**	**0.0000**	**1.0608**	**1.0608**	**2.0000e-004**	**0.0000**	**1.0659**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	5.0000e-005	4.9000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1004	0.1004	0.0000	0.0000	0.1005
Total	**6.0000e-005**	**5.0000e-005**	**4.9000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1004**	**0.1004**	**0.0000**	**0.0000**	**0.1005**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0542	0.5516	0.3876	5.7000e-004		0.0354	0.0354		0.0326	0.0326	0.0000	52.0058	52.0058	0.0162	0.0000	52.4106
Total	**0.0542**	**0.5516**	**0.3876**	**5.7000e-004**		**0.0354**	**0.0354**		**0.0326**	**0.0326**	**0.0000**	**52.0058**	**52.0058**	**0.0162**	**0.0000**	**52.4106**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4400e-003	0.0436	9.9000e-003	1.0000e-004	2.2100e-003	3.0000e-004	2.5100e-003	6.4000e-004	2.9000e-004	9.2000e-004	0.0000	9.0893	9.0893	6.6000e-004	0.0000	9.1059
Worker	5.0200e-003	4.2300e-003	0.0414	9.0000e-005	9.3200e-003	7.0000e-005	9.3900e-003	2.4800e-003	6.0000e-005	2.5400e-003	0.0000	8.5359	8.5359	3.1000e-004	0.0000	8.5437
Total	**6.4600e-003**	**0.0478**	**0.0513**	**1.9000e-004**	**0.0115**	**3.7000e-004**	**0.0119**	**3.1200e-003**	**3.5000e-004**	**3.4600e-003**	**0.0000**	**17.6253**	**17.6253**	**9.7000e-004**	**0.0000**	**17.6496**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0542	0.5516	0.3876	5.7000e-004		0.0354	0.0354		0.0326	0.0326	0.0000	52.0058	52.0058	0.0162	0.0000	52.4105

Total	**0.0542**	**0.5516**	**0.3876**	**5.7000e-004**		**0.0354**	**0.0354**		**0.0326**	**0.0326**	**0.0000**	**52.0058**	**52.0058**	**0.0162**	**0.0000**	**52.4105**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4400e-003	0.0436	9.9000e-003	1.0000e-004	2.2100e-003	3.0000e-004	2.5100e-003	6.4000e-004	2.9000e-004	9.2000e-004	0.0000	9.0893	9.0893	6.6000e-004	0.0000	9.1059
Worker	5.0200e-003	4.2300e-003	0.0414	9.0000e-005	9.3200e-003	7.0000e-005	9.3900e-003	2.4800e-003	6.0000e-005	2.5400e-003	0.0000	8.5359	8.5359	3.1000e-004	0.0000	8.5437
Total	**6.4600e-003**	**0.0478**	**0.0513**	**1.9000e-004**	**0.0115**	**3.7000e-004**	**0.0119**	**3.1200e-003**	**3.5000e-004**	**3.4600e-003**	**0.0000**	**17.6253**	**17.6253**	**9.7000e-004**	**0.0000**	**17.6496**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.3000e-003	0.0219	0.0181	3.0000e-005		1.2800e-003	1.2800e-003		1.1800e-003	1.1800e-003	0.0000	2.4270	2.4270	6.8000e-004	0.0000	2.4441
Paving	4.3000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.7300e-003**	**0.0219**	**0.0181**	**3.0000e-005**		**1.2800e-003**	**1.2800e-003**		**1.1800e-003**	**1.1800e-003**	**0.0000**	**2.4270**	**2.4270**	**6.8000e-004**	**0.0000**	**2.4441**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	2.2000e-004	2.1900e-003	1.0000e-005	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4519	0.4519	2.0000e-005	0.0000	0.4523
Total	**2.7000e-004**	**2.2000e-004**	**2.1900e-003**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4519**	**0.4519**	**2.0000e-005**	**0.0000**	**0.4523**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.3000e-003	0.0219	0.0181	3.0000e-005		1.2800e-003	1.2800e-003		1.1800e-003	1.1800e-003	0.0000	2.4270	2.4270	6.8000e-004	0.0000	2.4441
Paving	4.3000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.7300e-003**	**0.0219**	**0.0181**	**3.0000e-005**		**1.2800e-003**	**1.2800e-003**		**1.1800e-003**	**1.1800e-003**	**0.0000**	**2.4270**	**2.4270**	**6.8000e-004**	**0.0000**	**2.4441**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	2.2000e-004	2.1900e-003	1.0000e-005	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4519	0.4519	2.0000e-005	0.0000	0.4523
Total	**2.7000e-004**	**2.2000e-004**	**2.1900e-003**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4519**	**0.4519**	**2.0000e-005**	**0.0000**	**0.4523**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1366					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5000e-004	5.0100e-003	4.6400e-003	1.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	0.6383	0.6383	6.0000e-005	0.0000	0.6398
Total	**0.1374**	**5.0100e-003**	**4.6400e-003**	**1.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**0.6383**	**0.6383**	**6.0000e-005**	**0.0000**	**0.6398**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	4.0000e-005	4.0000e-005	3.7000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0753	0.0753	0.0000	0.0000	0.0754
Total	**4.0000e-005**	**4.0000e-005**	**3.7000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0753**	**0.0753**	**0.0000**	**0.0000**	**0.0754**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1366					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5000e-004	5.0100e-003	4.6400e-003	1.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	0.6383	0.6383	6.0000e-005	0.0000	0.6398
Total	**0.1374**	**5.0100e-003**	**4.6400e-003**	**1.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**0.6383**	**0.6383**	**6.0000e-005**	**0.0000**	**0.6398**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	4.0000e-005	3.7000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0753	0.0753	0.0000	0.0000	0.0754
Total	**4.0000e-005**	**4.0000e-005**	**3.7000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0753**	**0.0753**	**0.0000**	**0.0000**	**0.0754**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7929	5.5819	7.5242	0.0249	1.6378	0.0223	1.6600	0.4390	0.0209	0.4599	0.0000	2,311.2929	2,311.2929	0.1608	0.0000	2,315.3137
Unmitigated	0.7929	5.5819	7.5242	0.0249	1.6378	0.0223	1.6600	0.4390	0.0209	0.4599	0.0000	2,311.2929	2,311.2929	0.1608	0.0000	2,315.3137

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Government Office Building	1,000.86	0.00	0.00	1,683,428	1,683,428
High Turnover (Sit Down Restaurant)	1,846.22	2,299.53	1914.32	2,617,596	2,617,596
Parking Lot	0.00	0.00	0.00		
Total	2,847.08	2,299.53	1,914.32	4,301,024	4,301,024

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Government Office Building	16.60	8.40	6.90	33.00	62.00	5.00	50	34	16
High Turnover (Sit Down ...	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
High Turnover (Sit Down Restaurant)	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082

Government Office Building	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082
Parking Lot	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	272.6328	272.6328	0.0113	2.3300e-003	273.6081
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	272.6328	272.6328	0.0113	2.3300e-003	273.6081
NaturalGas Mitigated	0.0217	0.1974	0.1658	1.1800e-003		0.0150	0.0150		0.0150	0.0150	0.0000	214.8793	214.8793	4.1200e-003	3.9400e-003	216.1562
NaturalGas Unmitigated	0.0217	0.1974	0.1658	1.1800e-003		0.0150	0.0150		0.0150	0.0150	0.0000	214.8793	214.8793	4.1200e-003	3.9400e-003	216.1562

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Government Office Building	50674.8	2.7000e-004	2.4800e-003	2.0900e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	2.7042	2.7042	5.0000e-005	5.0000e-005	2.7203
High Turnover (Sit Down Restaurant)	3.97601e+006	0.0214	0.1949	0.1637	1.1700e-003		0.0148	0.0148		0.0148	0.0148	0.0000	212.1751	212.1751	4.0700e-003	3.8900e-003	213.4360

Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0217**	**0.1974**	**0.1658**	**1.1800e-003**		**0.0150**	**0.0150**		**0.0150**	**0.0150**	**0.0000**	**214.8793**	**214.8793**	**4.1200e-003**	**3.9400e-003**	**216.1562**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Government Office Building	50674.8	2.7000e-004	2.4800e-003	2.0900e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	2.7042	2.7042	5.0000e-005	5.0000e-005	2.7203
High Turnover (Sit Down Restaurant)	3.97601e+006	0.0214	0.1949	0.1637	1.1700e-003		0.0148	0.0148		0.0148	0.0148	0.0000	212.1751	212.1751	4.0700e-003	3.8900e-003	213.4360
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0217**	**0.1974**	**0.1658**	**1.1800e-003**		**0.0150**	**0.0150**		**0.0150**	**0.0150**	**0.0000**	**214.8793**	**214.8793**	**4.1200e-003**	**3.9400e-003**	**216.1562**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Government Office Building	141715	45.1535	1.8600e-003	3.9000e-004	45.3150
High Turnover (Sit Down Restaurant)	701171	223.4080	9.2200e-003	1.9100e-003	224.2073
Parking Lot	12777.6	4.0712	1.7000e-004	3.0000e-005	4.0858
Total		**272.6328**	**0.0113**	**2.3300e-003**	**273.6081**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Government Office Building	141715	45.1535	1.8600e-003	3.9000e-004	45.3150
High Turnover (Sit Down Restaurant)	701171	223.4080	9.2200e-003	1.9100e-003	224.2073
Parking Lot	12777.6	4.0712	1.7000e-004	3.0000e-005	4.0858
Total		**272.6328**	**0.0113**	**2.3300e-003**	**273.6081**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1196	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Unmitigated	0.1196	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0137					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1059					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1196**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0137					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1059					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1196**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	39.8197	0.2392	5.9300e-003	47.5659
Unmitigated	39.8197	0.2392	5.9300e-003	47.5659

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Government Office Building	2.88454 / 1.76794	19.1407	0.0948	2.3800e-003	22.2171
High Turnover (Sit Down Restaurant)	4.40731 / 0.281318	20.6790	0.1444	3.5600e-003	25.3488
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**39.8197**	**0.2392**	**5.9400e-003**	**47.5659**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e

Land Use	Mgal	MT/yr			
Government Office Building	2.88454 / 1.76794	19.1407	0.0948	2.3800e-003	22.2171
High Turnover (Sit Down Restaurant)	4.40731 / 0.281318	20.6790	0.1444	3.5600e-003	25.3488
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**39.8197**	**0.2392**	**5.9400e-003**	**47.5659**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	37.8152	2.2348	0.0000	93.6855
Unmitigated	37.8152	2.2348	0.0000	93.6855

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			

Government Office Building	13.5	2.7404	0.1620	0.0000	6.7892
High Turnover (Sit Down Restaurant)	172.79	35.0748	2.0729	0.0000	86.8964
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**37.8152**	**2.2348**	**0.0000**	**93.6855**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Government Office Building	13.5	2.7404	0.1620	0.0000	6.7892
High Turnover (Sit Down Restaurant)	172.79	35.0748	2.0729	0.0000	86.8964
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**37.8152**	**2.2348**	**0.0000**	**93.6855**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Fontana GP - San Bernardino-South Coast County, Annual

Fontana General Plan Update

San Bernardino-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	1.55	Dwelling Unit	0.50	2,790.00	4
Condo/Townhouse	4.00	Dwelling Unit	0.25	4,000.00	11
Apartments Mid Rise	9.60	Dwelling Unit	0.25	9,600.00	27

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	OperationalYear	2018	2020

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.2030	1.0673	0.8401	1.3800e-003	0.0152	0.0634	0.0786	5.9700e-003	0.0609	0.0668	0.0000	117.4998	117.4998	0.0234	0.0000	118.0835
Maximum	**0.2030**	**1.0673**	**0.8401**	**1.3800e-003**	**0.0152**	**0.0634**	**0.0786**	**5.9700e-003**	**0.0609**	**0.0668**	**0.0000**	**117.4998**	**117.4998**	**0.0234**	**0.0000**	**118.0835**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.2030	1.0673	0.8401	1.3800e-003	0.0152	0.0634	0.0786	5.9700e-003	0.0609	0.0668	0.0000	117.4997	117.4997	0.0234	0.0000	118.0834
Maximum	**0.2030**	**1.0673**	**0.8401**	**1.3800e-003**	**0.0152**	**0.0634**	**0.0786**	**5.9700e-003**	**0.0609**	**0.0668**	**0.0000**	**117.4997**	**117.4997**	**0.0234**	**0.0000**	**118.0834**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**4-20-2018**	**7-19-2018**	0.6938	0.6938
2	**7-20-2018**	**9-30-2018**	0.5158	0.5158
		Highest	0.6938	0.6938

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1189	5.7500e-003	0.2534	2.5000e-004		0.0154	0.0154		0.0154	0.0154	1.6145	3.3482	4.9627	5.0600e-003	1.1000e-004	5.1219
Energy	1.8600e-003	0.0159	6.7700e-003	1.0000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	45.8576	45.8576	1.4900e-003	5.7000e-004	46.0653
Mobile	0.0382	0.2886	0.4871	1.7600e-003	0.1297	1.6100e-003	0.1313	0.0348	1.5200e-003	0.0363	0.0000	162.9803	162.9803	8.8100e-003	0.0000	163.2005
Waste						0.0000	0.0000		0.0000	0.0000	1.6036	0.0000	1.6036	0.0948	0.0000	3.9729
Water						0.0000	0.0000		0.0000	0.0000	0.3132	6.2980	6.6112	0.0324	8.1000e-004	7.6641
Total	**0.1590**	**0.3103**	**0.7472**	**2.1100e-003**	**0.1297**	**0.0183**	**0.1480**	**0.0348**	**0.0182**	**0.0529**	**3.5313**	**218.4841**	**222.0155**	**0.1426**	**1.4900e-003**	**226.0247**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1189	5.7500e-003	0.2534	2.5000e-004		0.0154	0.0154		0.0154	0.0154	1.6145	3.3482	4.9627	5.0600e-003	1.1000e-004	5.1219
Energy	1.8600e-003	0.0159	6.7700e-003	1.0000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	45.8576	45.8576	1.4900e-003	5.7000e-004	46.0653
Mobile	0.0382	0.2886	0.4871	1.7600e-003	0.1297	1.6100e-003	0.1313	0.0348	1.5200e-003	0.0363	0.0000	162.9803	162.9803	8.8100e-003	0.0000	163.2005
Waste						0.0000	0.0000		0.0000	0.0000	1.6036	0.0000	1.6036	0.0948	0.0000	3.9729
Water						0.0000	0.0000		0.0000	0.0000	0.3132	6.2980	6.6112	0.0324	8.1000e-004	7.6641

Total	**0.1590**	**0.3103**	**0.7472**	**2.1100e-003**	**0.1297**	**0.0183**	**0.1480**	**0.0348**	**0.0182**	**0.0529**	**3.5313**	**218.4841**	**222.0155**	**0.1426**	**1.4900e-003**	**226.0247**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/20/2018	5/3/2018	5	10	
2	Site Preparation	Site Preparation	5/4/2018	5/4/2018	5	1	
3	Grading	Grading	5/5/2018	5/8/2018	5	2	
4	Building Construction	Building Construction	5/9/2018	9/25/2018	5	100	
5	Paving	Paving	9/26/2018	10/2/2018	5	5	
6	Architectural Coating	Architectural Coating	10/3/2018	10/9/2018	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0.75

Acres of Paving: 0

Residential Indoor: 33,190; Residential Outdoor: 11,063; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Graders	1	6.00	187	0.41

Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Graders	1	8.00	187	0.41
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	1	8.00	132	0.36
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	2.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0124	0.1218	0.0756	1.2000e-004		7.1800e-003	7.1800e-003		6.7100e-003	6.7100e-003	0.0000	10.8462	10.8462	2.7500e-003	0.0000	10.9148
Total	**0.0124**	**0.1218**	**0.0756**	**1.2000e-004**		**7.1800e-003**	**7.1800e-003**		**6.7100e-003**	**6.7100e-003**	**0.0000**	**10.8462**	**10.8462**	**2.7500e-003**	**0.0000**	**10.9148**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	3.2000e-004	3.1700e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6528	0.6528	2.0000e-005	0.0000	0.6533
Total	**3.8000e-004**	**3.2000e-004**	**3.1700e-003**	**1.0000e-005**	**7.1000e-004**	**1.0000e-005**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6528**	**0.6528**	**2.0000e-005**	**0.0000**	**0.6533**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.0124	0.1218	0.0756	1.2000e-004		7.1800e-003	7.1800e-003		6.7100e-003	6.7100e-003	0.0000	10.8461	10.8461	2.7500e-003	0.0000	10.9148
Total	**0.0124**	**0.1218**	**0.0756**	**1.2000e-004**		**7.1800e-003**	**7.1800e-003**		**6.7100e-003**	**6.7100e-003**	**0.0000**	**10.8461**	**10.8461**	**2.7500e-003**	**0.0000**	**10.9148**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	3.2000e-004	3.1700e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6528	0.6528	2.0000e-005	0.0000	0.6533
Total	**3.8000e-004**	**3.2000e-004**	**3.1700e-003**	**1.0000e-005**	**7.1000e-004**	**1.0000e-005**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6528**	**0.6528**	**2.0000e-005**	**0.0000**	**0.6533**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.9000e-003	0.0000	2.9000e-003	1.4800e-003	0.0000	1.4800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-004	0.0104	4.0400e-003	1.0000e-005		4.8000e-004	4.8000e-004		4.4000e-004	4.4000e-004	0.0000	0.7872	0.7872	2.5000e-004	0.0000	0.7933
Total	**9.0000e-004**	**0.0104**	**4.0400e-003**	**1.0000e-005**	**2.9000e-003**	**4.8000e-004**	**3.3800e-003**	**1.4800e-003**	**4.4000e-004**	**1.9200e-003**	**0.0000**	**0.7872**	**0.7872**	**2.5000e-004**	**0.0000**	**0.7933**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0402	0.0402	0.0000	0.0000	0.0402
Total	**2.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0402**	**0.0402**	**0.0000**	**0.0000**	**0.0402**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.9000e-003	0.0000	2.9000e-003	1.4800e-003	0.0000	1.4800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-004	0.0104	4.0400e-003	1.0000e-005		4.8000e-004	4.8000e-004		4.4000e-004	4.4000e-004	0.0000	0.7872	0.7872	2.5000e-004	0.0000	0.7933
Total	**9.0000e-004**	**0.0104**	**4.0400e-003**	**1.0000e-005**	**2.9000e-003**	**4.8000e-004**	**3.3800e-003**	**1.4800e-003**	**4.4000e-004**	**1.9200e-003**	**0.0000**	**0.7872**	**0.7872**	**2.5000e-004**	**0.0000**	**0.7933**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0402	0.0402	0.0000	0.0000	0.0402
Total	**2.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0402**	**0.0402**	**0.0000**	**0.0000**	**0.0402**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.9100e-003	0.0000	4.9100e-003	2.5300e-003	0.0000	2.5300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5000e-003	0.0171	6.7600e-003	1.0000e-005		7.9000e-004	7.9000e-004		7.3000e-004	7.3000e-004	0.0000	1.2894	1.2894	4.0000e-004	0.0000	1.2994
Total	**1.5000e-003**	**0.0171**	**6.7600e-003**	**1.0000e-005**	**4.9100e-003**	**7.9000e-004**	**5.7000e-003**	**2.5300e-003**	**7.3000e-004**	**3.2600e-003**	**0.0000**	**1.2894**	**1.2894**	**4.0000e-004**	**0.0000**	**1.2994**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	4.0000e-005	3.9000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0803	0.0803	0.0000	0.0000	0.0804
Total	**5.0000e-005**	**4.0000e-005**	**3.9000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0803**	**0.0803**	**0.0000**	**0.0000**	**0.0804**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.9100e-003	0.0000	4.9100e-003	2.5300e-003	0.0000	2.5300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5000e-003	0.0171	6.7600e-003	1.0000e-005		7.9000e-004	7.9000e-004		7.3000e-004	7.3000e-004	0.0000	1.2893	1.2893	4.0000e-004	0.0000	1.2994
Total	**1.5000e-003**	**0.0171**	**6.7600e-003**	**1.0000e-005**	**4.9100e-003**	**7.9000e-004**	**5.7000e-003**	**2.5300e-003**	**7.3000e-004**	**3.2600e-003**	**0.0000**	**1.2893**	**1.2893**	**4.0000e-004**	**0.0000**	**1.2994**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	4.0000e-005	3.9000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0803	0.0803	0.0000	0.0000	0.0804
Total	**5.0000e-005**	**4.0000e-005**	**3.9000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0803**	**0.0803**	**0.0000**	**0.0000**	**0.0804**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1296	0.8714	0.6938	1.1000e-003		0.0529	0.0529		0.0511	0.0511	0.0000	92.1173	92.1173	0.0185	0.0000	92.5809
Total	**0.1296**	**0.8714**	**0.6938**	**1.1000e-003**		**0.0529**	**0.0529**		**0.0511**	**0.0511**	**0.0000**	**92.1173**	**92.1173**	**0.0185**	**0.0000**	**92.5809**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1000e-004	0.0125	2.8300e-003	3.0000e-005	6.3000e-004	9.0000e-005	7.2000e-004	1.8000e-004	8.0000e-005	2.6000e-004	0.0000	2.5970	2.5970	1.9000e-004	0.0000	2.6017
Worker	2.9500e-003	2.4900e-003	0.0244	6.0000e-005	5.4800e-003	4.0000e-005	5.5200e-003	1.4600e-003	4.0000e-005	1.4900e-003	0.0000	5.0211	5.0211	1.8000e-004	0.0000	5.0257
Total	**3.3600e-003**	**0.0149**	**0.0272**	**9.0000e-005**	**6.1100e-003**	**1.3000e-004**	**6.2400e-003**	**1.6400e-003**	**1.2000e-004**	**1.7500e-003**	**0.0000**	**7.6181**	**7.6181**	**3.7000e-004**	**0.0000**	**7.6274**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1296	0.8714	0.6938	1.1000e-003		0.0529	0.0529		0.0511	0.0511	0.0000	92.1172	92.1172	0.0185	0.0000	92.5808
Total	**0.1296**	**0.8714**	**0.6938**	**1.1000e-003**		**0.0529**	**0.0529**		**0.0511**	**0.0511**	**0.0000**	**92.1172**	**92.1172**	**0.0185**	**0.0000**	**92.5808**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1000e-004	0.0125	2.8300e-003	3.0000e-005	6.3000e-004	9.0000e-005	7.2000e-004	1.8000e-004	8.0000e-005	2.6000e-004	0.0000	2.5970	2.5970	1.9000e-004	0.0000	2.6017
Worker	2.9500e-003	2.4900e-003	0.0244	6.0000e-005	5.4800e-003	4.0000e-005	5.5200e-003	1.4600e-003	4.0000e-005	1.4900e-003	0.0000	5.0211	5.0211	1.8000e-004	0.0000	5.0257
Total	**3.3600e-003**	**0.0149**	**0.0272**	**9.0000e-005**	**6.1100e-003**	**1.3000e-004**	**6.2400e-003**	**1.6400e-003**	**1.2000e-004**	**1.7500e-003**	**0.0000**	**7.6181**	**7.6181**	**3.7000e-004**	**0.0000**	**7.6274**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.5500e-003	0.0261	0.0225	3.0000e-005		1.5200e-003	1.5200e-003		1.4000e-003	1.4000e-003	0.0000	3.0537	3.0537	9.3000e-004	0.0000	3.0770

Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.5500e-003**	**0.0261**	**0.0225**	**3.0000e-005**		**1.5200e-003**	**1.5200e-003**		**1.4000e-003**	**1.4000e-003**	**0.0000**	**3.0537**	**3.0537**	**9.3000e-004**	**0.0000**	**3.0770**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.6000e-004	1.5800e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3264	0.3264	1.0000e-005	0.0000	0.3267
Total	**1.9000e-004**	**1.6000e-004**	**1.5800e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3264**	**0.3264**	**1.0000e-005**	**0.0000**	**0.3267**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.5500e-003	0.0261	0.0225	3.0000e-005		1.5200e-003	1.5200e-003		1.4000e-003	1.4000e-003	0.0000	3.0537	3.0537	9.3000e-004	0.0000	3.0770
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.5500e-003**	**0.0261**	**0.0225**	**3.0000e-005**		**1.5200e-003**	**1.5200e-003**		**1.4000e-003**	**1.4000e-003**	**0.0000**	**3.0537**	**3.0537**	**9.3000e-004**	**0.0000**	**3.0770**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.6000e-004	1.5800e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3264	0.3264	1.0000e-005	0.0000	0.3267
Total	**1.9000e-004**	**1.6000e-004**	**1.5800e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3264**	**0.3264**	**1.0000e-005**	**0.0000**	**0.3267**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0513					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5000e-004	5.0100e-003	4.6400e-003	1.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	0.6383	0.6383	6.0000e-005	0.0000	0.6398
Total	**0.0520**	**5.0100e-003**	**4.6400e-003**	**1.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**0.6383**	**0.6383**	**6.0000e-005**	**0.0000**	**0.6398**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.4000e-004	0.0000	5.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0502	0.0502	0.0000	0.0000	0.0503
Total	**3.0000e-005**	**2.0000e-005**	**2.4000e-004**	**0.0000**	**5.0000e-005**	**0.0000**	**6.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0502**	**0.0502**	**0.0000**	**0.0000**	**0.0503**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0513					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5000e-004	5.0100e-003	4.6400e-003	1.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	0.6383	0.6383	6.0000e-005	0.0000	0.6398
Total	**0.0520**	**5.0100e-003**	**4.6400e-003**	**1.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**0.6383**	**0.6383**	**6.0000e-005**	**0.0000**	**0.6398**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	3.0000e-005	2.0000e-005	2.4000e-004	0.0000	5.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0502	0.0502	0.0000	0.0000	0.0503
Total	**3.0000e-005**	**2.0000e-005**	**2.4000e-004**	**0.0000**	**5.0000e-005**	**0.0000**	**6.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0502**	**0.0502**	**0.0000**	**0.0000**	**0.0503**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0382	0.2886	0.4871	1.7600e-003	0.1297	1.6100e-003	0.1313	0.0348	1.5200e-003	0.0363	0.0000	162.9803	162.9803	8.8100e-003	0.0000	163.2005
Unmitigated	0.0382	0.2886	0.4871	1.7600e-003	0.1297	1.6100e-003	0.1313	0.0348	1.5200e-003	0.0363	0.0000	162.9803	162.9803	8.8100e-003	0.0000	163.2005

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	63.84	61.34	56.26	213,230	213,230
Condo/Townhouse	23.24	22.68	19.36	77,247	77,247
Single Family Housing	14.76	15.36	13.36	50,038	50,038
Total	101.84	99.38	88.98	340,515	340,515

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082
Condo/Townhouse	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082
Apartments Mid Rise	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	27.4374	27.4374	1.1300e-003	2.3000e-004	27.5356
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	27.4374	27.4374	1.1300e-003	2.3000e-004	27.5356
NaturalGas Mitigated	1.8600e-003	0.0159	6.7700e-003	1.0000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	18.4202	18.4202	3.5000e-004	3.4000e-004	18.5297
NaturalGas Unmitigated	1.8600e-003	0.0159	6.7700e-003	1.0000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	18.4202	18.4202	3.5000e-004	3.4000e-004	18.5297

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	179295	9.7000e-004	8.2600e-003	3.5200e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004	0.0000	9.5679	9.5679	1.8000e-004	1.8000e-004	9.6247
Condo/Townhouse	108340	5.8000e-004	4.9900e-003	2.1200e-003	3.0000e-005		4.0000e-004	4.0000e-004		4.0000e-004	4.0000e-004	0.0000	5.7815	5.7815	1.1000e-004	1.1000e-004	5.8158
Single Family Housing	57545.9	3.1000e-004	2.6500e-003	1.1300e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	3.0709	3.0709	6.0000e-005	6.0000e-005	3.0891
Total		**1.8600e-003**	**0.0159**	**6.7700e-003**	**1.0000e-004**		**1.2800e-003**	**1.2800e-003**		**1.2800e-003**	**1.2800e-003**	**0.0000**	**18.4202**	**18.4202**	**3.5000e-004**	**3.5000e-004**	**18.5297**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	179295	9.7000e-004	8.2600e-003	3.5200e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004	0.0000	9.5679	9.5679	1.8000e-004	1.8000e-004	9.6247
Condo/Townhouse	108340	5.8000e-004	4.9900e-003	2.1200e-003	3.0000e-005		4.0000e-004	4.0000e-004		4.0000e-004	4.0000e-004	0.0000	5.7815	5.7815	1.1000e-004	1.1000e-004	5.8158
Single Family Housing	57545.9	3.1000e-004	2.6500e-003	1.1300e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	3.0709	3.0709	6.0000e-005	6.0000e-005	3.0891
Total		**1.8600e-003**	**0.0159**	**6.7700e-003**	**1.0000e-004**		**1.2800e-003**	**1.2800e-003**		**1.2800e-003**	**1.2800e-003**	**0.0000**	**18.4202**	**18.4202**	**3.5000e-004**	**3.5000e-004**	**18.5297**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			

Apartments Mid Rise	47319.2	15.0769	6.2000e-004	1.3000e-004	15.1308
Condo/Townhouse	24274.9	7.7345	3.2000e-004	7.0000e-005	7.7622
Single Family Housing	14518.9	4.6260	1.9000e-004	4.0000e-005	4.6426
Total		**27.4374**	**1.1300e-003**	**2.4000e-004**	**27.5356**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	47319.2	15.0769	6.2000e-004	1.3000e-004	15.1308
Condo/Townhouse	24274.9	7.7345	3.2000e-004	7.0000e-005	7.7622
Single Family Housing	14518.9	4.6260	1.9000e-004	4.0000e-005	4.6426
Total		**27.4374**	**1.1300e-003**	**2.4000e-004**	**27.5356**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Mitigated	0.1189	5.7500e-003	0.2534	2.5000e-004		0.0154	0.0154		0.0154	0.0154	1.6145	3.3482	4.9627	5.0600e-003	1.1000e-004	5.1219
Unmitigated	0.1189	5.7500e-003	0.2534	2.5000e-004		0.0154	0.0154		0.0154	0.0154	1.6145	3.3482	4.9627	5.0600e-003	1.1000e-004	5.1219

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.1300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0592					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0498	3.9300e-003	0.0966	2.5000e-004		0.0145	0.0145		0.0145	0.0145	1.6145	3.0930	4.7075	4.8100e-003	1.1000e-004	4.8605
Landscaping	4.7700e-003	1.8100e-003	0.1568	1.0000e-005		8.6000e-004	8.6000e-004		8.6000e-004	8.6000e-004	0.0000	0.2552	0.2552	2.5000e-004	0.0000	0.2614
Total	**0.1189**	**5.7400e-003**	**0.2534**	**2.6000e-004**		**0.0154**	**0.0154**		**0.0154**	**0.0154**	**1.6145**	**3.3482**	**4.9627**	**5.0600e-003**	**1.1000e-004**	**5.1219**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.1300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0592					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0498	3.9300e-003	0.0966	2.5000e-004		0.0145	0.0145		0.0145	0.0145	1.6145	3.0930	4.7075	4.8100e-003	1.1000e-004	4.8605

Landscaping	4.7700e-003	1.8100e-003	0.1568	1.0000e-005		8.6000e-004	8.6000e-004		8.6000e-004	8.6000e-004	0.0000	0.2552	0.2552	2.5000e-004	0.0000	0.2614
Total	**0.1189**	**5.7400e-003**	**0.2534**	**2.6000e-004**		**0.0154**	**0.0154**		**0.0154**	**0.0154**	**1.6145**	**3.3482**	**4.9627**	**5.0600e-003**	**1.1000e-004**	**5.1219**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	6.6112	0.0324	8.1000e-004	7.6641
Unmitigated	6.6112	0.0324	8.1000e-004	7.6641

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	0.625479 / 0.394323	4.1893	0.0206	5.2000e-004	4.8565
Condo/Townhouse	0.260616 / 0.164301	1.7455	8.5600e-003	2.1000e-004	2.0235
Single Family Housing	0.100989 / 0.0636668	0.6764	3.3200e-003	8.0000e-005	0.7841

Total		**6.6112**	**0.0324**	**8.1000e-004**	**7.6641**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	0.625479 / 0.394323	4.1893	0.0206	5.2000e-004	4.8565
Condo/Townhouse	0.260616 / 0.164301	1.7455	8.5600e-003	2.1000e-004	2.0235
Single Family Housing	0.100989 / 0.0636668	0.6764	3.3200e-003	8.0000e-005	0.7841
Total		**6.6112**	**0.0324**	**8.1000e-004**	**7.6641**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.6036	0.0948	0.0000	3.9729
Unmitigated	1.6036	0.0948	0.0000	3.9729

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	4.42	0.8972	0.0530	0.0000	2.2228
Condo/Townhouse	1.84	0.3735	0.0221	0.0000	0.9253
Single Family Housing	1.64	0.3329	0.0197	0.0000	0.8248
Total		**1.6036**	**0.0948**	**0.0000**	**3.9729**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	4.42	0.8972	0.0530	0.0000	2.2228
Condo/Townhouse	1.84	0.3735	0.0221	0.0000	0.9253
Single Family Housing	1.64	0.3329	0.0197	0.0000	0.8248
Total		**1.6036**	**0.0948**	**0.0000**	**3.9729**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX D
HABITAT ASSESSMENT

FONTANA GENERAL PLAN UPDATE

Habitat Assessment

Prepared For:

City of Fontana
8353 Sierra Avenue
Fontana, California 92335

Prepared By:

Michael Baker International
3536 Concours Street, Suite 100
Ontario, California 91764
Contact: *Thomas J. McGill, Ph.D.*
909.974.4907

August 2015

JN: 148287

FONTANA GENERAL PLAN UPDATE

CITY OF FONTANA, SAN BERNARDINO COUNTY, CALIFORNIA

Habitat Assessment

The undersigned certify that the statements furnished in this report and exhibits present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.

Ryan S. Winkleman
Biologist
Natural Resources

Thomas J. McGill, Ph.D.
Vice President
Natural Resources

August 2015

Executive Summary

This report contains the findings of Michael Baker International's biological resources survey for the City of Fontana's (City) General Plan update. The City of Fontana is located in southwestern San Bernardino County, CA.

Development throughout the City has heavily disturbed most of the naturally occurring habitats, with the only undisturbed habitat generally located at the northern and southern ends of the City at the base of the San Gabriel Mountains and in the Jurupa Hills. This has reduced the potential for the City to support many of the sensitive plant and wildlife species occurring in the region. During vegetation mapping conducted by Michael Baker in July and August 2015, eight (8) plant communities were observed within City limits: Riversidean sage scrub (RSS), northern mixed chaparral, Riversidean alluvial fan sage scrub (RAFSS), southern sycamore alder riparian woodland, California walnut woodland, non-native grassland, vineyard, and ornamental woodland. In addition there are two (2) land cover types found classified as disturbed and developed areas.

No sensitive plant species were observed within City limits during the vegetation mapping. Based on known recent distribution records, two (2) sensitive plant species are assumed to be present or to have a high likelihood of occurring within the City of Fontana: Plummer's mariposa lily (*Calochortus plummerae*) and Parry's spineflower (*Chorizanthe parryi var. parryi*). Based on habitat requirements for specific species and the availability and quality of habitats needed by each sensitive plant species, it was determined that there is a moderate potential for three (3) sensitive plant species to occur within City limits: mesa horkelia (*Horkelia cuneate var. puberula*), Robinson's pepper-grass (*Lepidium virginicum var. robinsonii*), and short-joint beavertail (*Opuntia basilaris var. brachyclada*). All other sensitive plant species have a low potential to occur within City limits or are presumed absent.

One (1) sensitive wildlife species was observed within City limits during the vegetation mapping: California horned lark (*Eremophila alpestris actia*). Based on known distribution records and/or direct observation, thirteen (13) sensitive wildlife species are known to regularly occur within the City of Fontana and are assumed to be present, including Cooper's hawk (*Accipiter cooperii*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), golden eagle (*Aquila chrysaetos*), Bell's sparrow (*Artemisiospiza belli*), burrowing owl (*Athene cunicularia*, BUOW), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), northern harrier (*Circus cyaneus*), California horned lark, loggerhead shrike (*Lanius ludovicianus*), Los Angeles pocket mouse (*Perognathus longimembris brevinasus*), coast horned lizard (*Phrynosoma blainvillii*), coastal California gnatcatcher (*Polioptila californica*, CAGN), and Delhi Sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*, DSF). Based on habitat requirements for specific species and the availability and quality of habitats

needed by each sensitive wildlife species, it was determined that there is a moderate or higher potential for an additional nine (9) sensitive wildlife species to occur, including silvery legless lizard (*Anniella pulchra pulchra*), orange-throated whiptail (*Aspidoscelis hyperythra*), Swainson's hawk (*Buteo swainsoni*), red-diamond rattlesnake (*Crotalus ruber*), western mastiff bat (*Eumops perotis californicus*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), San Diego desert woodrat (*Neotoma lepida intermedia*), southern grasshopper mouse (*Onychomys torridus ramona*), and yellow warbler (*Setophaga petechia*). All other sensitive wildlife species have a low potential to occur within City limits or are presumed absent.

Special attention was given to the suitability of the habitat within and adjacent to the City limits to support San Bernardino kangaroo rat (*Dipodomys merriami parvus*, SBKR), DSF, CAGN, and BUOW. Suitable habitat for SBKR remains primarily in the northern portion of the city where there is still somewhat extensive and relatively undisturbed RAFSS habitat present, although this habitat has been cut off from all fluvial processes primarily by transportation development (especially Interstate 15 and its associated flood control facilities). Surveys conducted for SBKR within the last ten years have all been negative. Suitable habitat for DSF is located along the City's southern boundary in the Jurupa Hills, particularly along the southern terminus of Poplar Avenue, where a preserve has been set aside specifically for this species. Suitable habitat for CAGN is present in both the northern and southern City limits where RSS grows in the San Gabriel Mountains and Jurupa Hills, respectively. Suitable habitat for BUOW is present in many areas in the northern City limits where extensive non-native grasslands remain, as well as along a series of flood control basins located immediately east of Etiwanda Avenue, particularly between San Bernardino Avenue and Slover Avenue, and in many of the vacant lots located throughout the City.

DSF, CAGN, and BUOW are assumed to be extant within City limits based on the most recent survey data, but SBKR now has a low potential to occur. It is recommended that focused surveys be conducted for all of these species, as well as for sensitive plants in general, within suitable habitat prior to the publication of the updated General Plan. Protocol surveys for SBKR are already required in suitable habitat in north Fontana under the North Fontana Multiple Species Habitat Conservation Plan (MBA 2004), and surveys for DSF and CAGN are required within DSF preserved habitat in south Fontana every three years or after natural or human-related habitat modification under U.S. Fish and Wildlife Service Biological Opinion FWS-SB-1788.9.

The City contains at least five (5) areas determined to be "waters of the U.S." and areas of wetlands. These areas fall under the jurisdiction of the U.S. Army Corps of Engineers. Additionally, areas of California Department of Fish and Wildlife jurisdictional riparian resources occur within the City. There are three (3) main drainage features flowing from the

foothills in the northern section of the City and two (2) or three (3) small drainages in the south, which flow from the Jurupa Hills. Within the developed areas are two (2) main drainage features, which have been previously modified for flood control measures. A formal jurisdictional delineation will be needed to determine their current statuses at the time of development and if permits are needed.

Table of Contents

Section 1 Introduction 5
1.1 Project Location 5
1.2 Project Description 5
Section 2 Methodology 10
2.1 Literature Review 10
2.2 Habitat Assessment and Field Investigation 11
2.3 Soil Series Assessment 11
2.4 Plant Communities 11
2.5 Plants 12
2.6 Wildlife 12
2.7 Jurisdictional Areas 12
Section 3 Existing Conditions 13
3.1 Local Climate 13
3.2 Topography and Soils 13
3.3 Surrounding Land Uses 13
Section 4 Discussion 15
4.1 Site Conditions 15
4.2 Vegetation 15
4.2.1 Riversidean Sage Scrub (1,539.3 acres) 15
4.2.2 Northern Mixed Chaparral (823.9 acres) 18
4.2.3 Riversidean Alluvial Fan Sage Scrub (1,331.3 acres) 18
4.2.4 Southern Sycamore Alder Riparian Woodland (51.7 acres) 19
4.2.5 California Walnut Woodland (17.7 acres) 19
4.2.6 Non-Native Grassland (2,506.7 acres) 19
4.2.7 Vineyard (415.5 acres) 20
4.2.8 Ornamental Woodland (101.6 acres) 20
4.2.9 Disturbed (367.1 acres) 20

4.2.10 Developed (556.0 acres) 20
4.3 Wildlife 21
4.3.1 Fish 21
4.3.2 Amphibians 21
4.3.3 Reptiles 21
4.3.4 Avian 22
4.3.5 Mammals 22
4.4 Nesting Birds 22
4.5 Migratory Corridors and Linkages 23
4.6 Jurisdictional Areas 23
4.7 Sensitive Biological Resources 24
4.7.1 Sensitive Plants 24
4.7.2 Sensitive Wildlife 27
4.7.3 Sensitive Plant Communities 36
4.8 Critical Habitat 36
4.9 Biological Constraints 38
Section 5 Recommendations 40
5.1 Focused Sensitive Species Surveys 40
Section 6 Conclusions 41
Section 7 References 43

EXHIBITS

Exhibit 1: Regional Vicinity 6
Exhibit 2: Site Vicinity 7
Exhibit 3: Fontana City Limits 8
Exhibit 4: Soils 14
Exhibit 5a: Vegetated Open Spaces 16
Exhibit 5b: Disturbed and Developed Open Spaces 17
Exhibit 6: Jurisdictional Areas 25
Exhibit 7: Critical Habitat 37
Exhibit 8: Biological Constraints 39

APPENDIX

Appendix A Site Photographs
Appendix B Wildlife Species Occurring or Potentially Occurring in the City of Fontana
Appendix C Potentially Occurring Sensitive Biological Resources

LIST OF ACRONYMS

BO	Biological Opinion
BUOW	Burrowing Owl
C	Celsius
CAGN	California Gnatcatcher
CDFW	California Department of Fish and Wildlife
City	City of Fontana
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	United States Army Corp of Engineers
CWA	Clean Water Act
DSF	Delhi Sands Flower-loving Fly
GIS	Geographic Information System
I	Interstate
Michael Baker	Michael Baker International
NRCS	Natural Resources Conservation Service
RAFSS	Riversidean Alluvial Fan Sage Scrub
RBF	RBF Consulting
Regional Board	Regional Water Quality Control Board
RSS	Riversidean Sage Scrub
SBKR	San Bernardino Kangaroo Rat
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

Section 1 Introduction

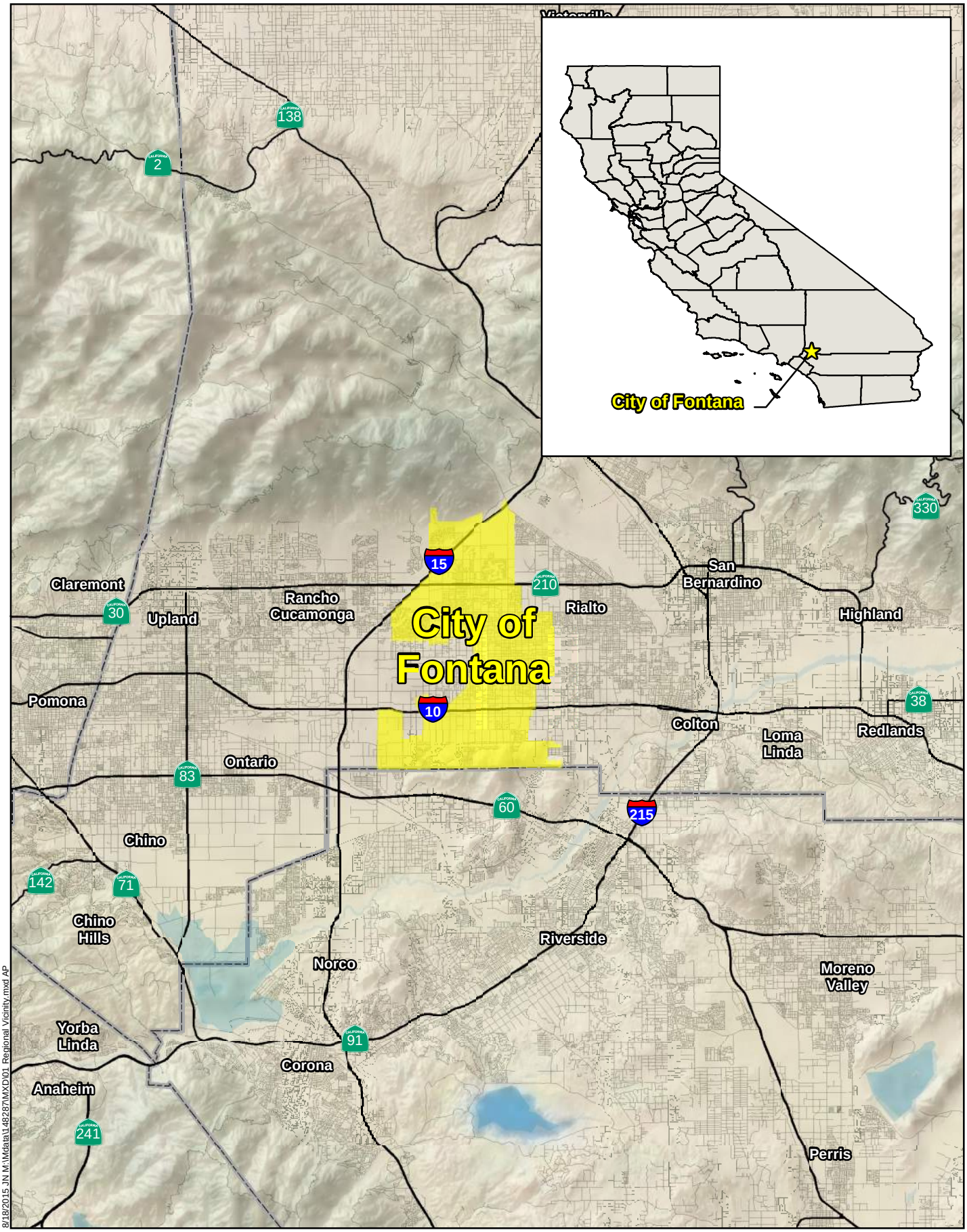
This report contains the findings of Michael Baker International's (Michael Baker) biological resources survey for the General Plan update for the City of Fontana, San Bernardino County, California (City). Vegetation mapping was conducted by Michael Baker biologist Ryan S. Winkleman in July and August, 2015 to verify existing site conditions, document changes from the previous biological survey report (MBA 2003), and assess the probability of occurrence for sensitive plant and wildlife species that could pose a constraint to development within the City. Special attention was given to the suitability of the habitat within and adjacent to the City limits to support San Bernardino kangaroo rat (*Dipodomys merriami parvus*, SBKR), Delhi Sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*, DSF), coastal California gnatcatcher (*Polioptila californica*, CAGN), and burrowing owl (*Athene cunicularia*, BUOW), as well as several other sensitive species identified by the California Natural Diversity Database (CNDDB) and other electronic databases as potentially occurring within or adjacent to City limits. A delineation of state and federal jurisdictional waters was not conducted during the surveys.

1.1 PROJECT LOCATION

The City of Fontana is generally located north of State Route 60, east and south of Interstate 15 (I-15), and west of I-215 in southwestern San Bernardino County, California (Exhibit 1, *Regional Vicinity*). A small portion of the City extends north of I-15. The City is depicted on the Cucamonga Peak, Devore, Fontana, and Guasti quadrangles of the United States Geological Survey's (USGS) 7.5-minute topographic map series in Sections 17, 18, 19, 20, 29, 30, 31, and 32 of Township 1 north, Range 5 west; Sections 13, 14, 23, 24, 25, 26, 33, 34, 35, 36 of Township 1 north, Range 6 west; Sections 4, 5, 6, 7, 8, 9, 16, 17, 18, 19, 20, 29, 30, 31, and 32 of Township 1 south, Range 5 west; and Sections 1, 2, 3, 12, 13, 21, 25, 26, 27, 28, 33, 34, 35, and 36 of Township 1 south, Range 6 west (Exhibit 2, *Site Vicinity*). In addition, there is an area abutting southwest Fontana that is considered part of the City's sphere of influence that was also included in this analysis. This area is depicted on the Fontana and Guasti USGS quadrangles in Sections 9, 10, 11, 12, 13, 14, 15, 16, 21, 22, 23, 24, and 27 of Township 1 south, Range 6 west. Specifically, the City is located north of Jurupa Valley and the Jurupa Hills; west of Bloomington, Rialto, Lytle Creek and the Cajon Wash; south of the San Bernardino National Forest and the San Gabriel Mountains; and east of Etiwanda, Rancho Cucamonga, and Ontario (Exhibit 3, *Fontana City Limits*).

1.2 PROJECT DESCRIPTION

Under California law (California State Code §65300), each city and county must adopt a comprehensive, long-term general plan to help guide its future development and the



8/19/2015 JN M:\Mdata\148287\MXD\01 Regional Vicinity.mxd AP

Michael Baker INTERNATIONAL

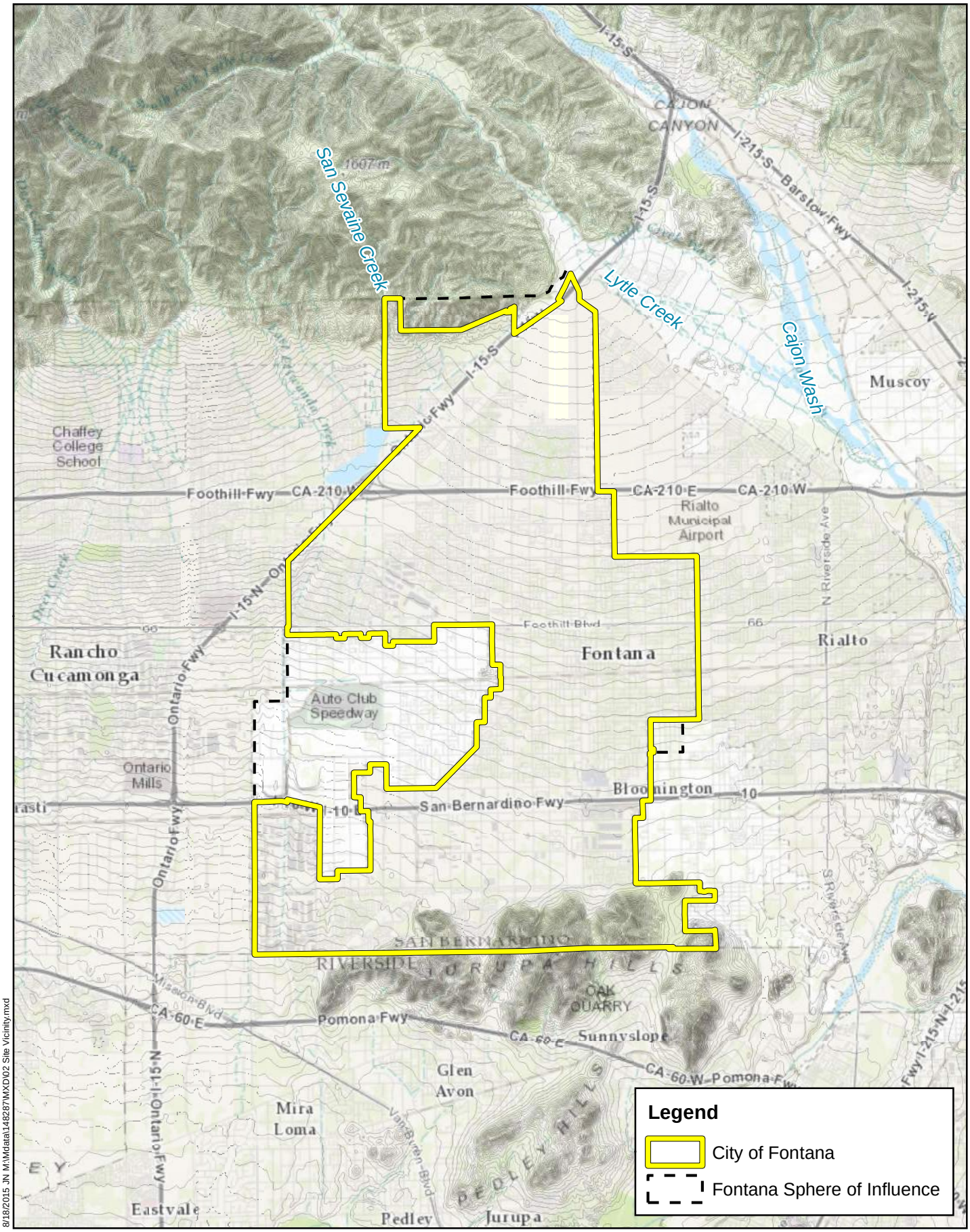
0 2.5 5 10 Miles

Source: ESRI Relief Map, National Highway Planning Network

FONTANA GENERAL PLAN UPDATE
HABITAT ASSESSMENT

Regional Vicinity

Exhibit 1



8/18/2015 JN M:\Mdata\148287\MXD\02 Site Vicinity.mxd

FONTANA GENERAL PLAN UPDATE
HABITAT ASSESSMENT

Site Vicinity

Michael Baker INTERNATIONAL

0 1 2 4 Miles

Source: San Bernardino County, ESRI World Topographic Map

Exhibit 2

San Gabriel Mountains
San Sevaine Creek
Lytle Creek Rd
15
Lytle Creek
Riverside Ave
Wilson Ave
RANCHO CUCAMONGA
Mango Ave
RIALTO
210
210
Palmetto Ave
Base Line Rd
East Ave
15
Foothill Blvd
Almeria Ave
Catawba Ave
Poplar Ave
Lime Ave
Maple Ave
Randall Ave
Locust Ave
San Bernardino Ave
San Bernardino Ave
Cherry Ave
Fontana Ave
Valley Blvd
Alder Ave
10
10
ONTARIO
BLOOMINGTON
Mulberry Ave
Almond Ave
Etiwanda Ave
Tamarind Ave
Jurupa Ave
Locust Ave
San Bernardino County
Riverside County
Jurupa Hills

Legend

- City of Fontana
- Fontana Sphere of Influence
- San Bernardino National Forest

8/19/2015 JN M:\Mdata\148287\MXD\03 Fontana City Limits.mxd

Michael Baker INTERNATIONAL

0 2,250 4,500 9,000 Feet

Source: San Bernardino County, Eagle Aerial 2014

FONTANA GENERAL PLAN UPDATE
HABITAT ASSESSMENT

Fontana City Limits

Exhibit 3

development of any land outside its boundaries which is still subject to or related to its own planning (i.e. within its sphere of influence). Each general plan typically focuses on identifying goals and objectives within a 10- to 20-year outlook and must address seven elements: Land Use, Circulation, Housing, Open Space, Conservation, Safety, and Noise. The City of Fontana adopted its most recent General Plan on October 21, 2003. In addition to the seven aforementioned required elements, the City also adopted Community Design; Economic Development; Public Facilities; Services and Infrastructure; Parks, Recreation, and Trails; and Air Quality.

Fontana is currently in the process of updating its General Plan to once again identify and guide its future physical development and identify its next set of goals and objectives. The goal of this document is to help inform the City's combined Open Space and Conservation Element.

Section 2 Methodology

Michael Baker conducted a literature review and records search to determine which sensitive biological resources have the potential to occur within or adjacent to the City. In addition, a general habitat assessment and field investigation of the City's remaining open space and natural habitat was conducted to update the City's existing conditions and to assess the potential for sensitive biological resources to occur.

2.1 LITERATURE REVIEW

The literature review and records search was conducted to document all sensitive biological resources potentially occurring within or adjacent to the City between the years 2003 (the year of the previous biological resources report (MBA 2003)) and 2015. Previously recorded occurrences of sensitive[1] plant and wildlife species and their proximity to the City were determined through a query of the California Department of Fish and Wildlife's CNDDB Rarefind 5, CNDDB Quickview Tool, the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California, Calflora Database, compendia of sensitive species published by CDFW, and the United States Fish and Wildlife Service (USFWS) species listings.

Literature detailing biological resources previously observed in the vicinity of the City and historical land uses were reviewed to understand the extent of disturbances to the habitats on-site. Standard field guides and texts on sensitive and non-sensitive biological resources were reviewed for habitat requirements, as well as the following resources:

- Michael Brandman Associates' City of Fontana Biological Resources Survey Data (MBA 2003);
- CDFW 2012 Staff Report on Burrowing Owl Mitigation;
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS), Soil Survey;
- USFWS Critical Habitat designations for Threatened and Endangered Species;
- Primary Constituent Elements for SBKR and CAGN; and
- Habitat requirements for SBKR, DSF, CAGN, and BUOW.

[1] As used in this report, "sensitive" refers to plant and animal species that are federally or State listed, proposed, or candidates; plant species that have been designated a California Native Plant Society Rare Plant Rank; and animal species that are designated by the CDFW as fully protected, species of special concern, or watch list species.

The literature review provided a baseline from which to inventory the biological resources potentially occurring within or adjacent to the City. Additional recorded occurrences of these species found within or near the City were derived from database queries. The CNDDB ArcGIS database was used, in conjunction with ArcGIS software, to locate the nearest occurrence and determine its proximity to the City.

2.2 HABITAT ASSESSMENT

Michael Baker biologist Ryan S. Winkleman inventoried and evaluated the current extent and conditions of the plant communities found within the City limits in July and August, 2015. Areas evaluated included those observed on aerial imagery (Google Earth Pro, aerial imagery dated 4/27/2014) as being open spaces; the goal of the survey was to confirm plant communities within those spaces or, if they had since been developed, to note as much. Plant communities identified by the previous biological resources report (MBA 2003) or observed on aerial photographs during the literature review were verified by windshield surveys. The plant communities were evaluated for their potential to support sensitive plant and wildlife species. In addition, field staff identified, through aerial photographs, any jurisdictional features, riparian/riverine habitat, and natural corridors and linkages that may support the movement of wildlife through the area. Special attention was given to any sensitive habitats and/or undeveloped areas, which have higher potentials to support sensitive flora and fauna species.

All observed wildlife species were recorded. In addition, site characteristics such as soil condition, topography, hydrology, anthropogenic disturbances, indicator species, condition of on-site plant communities, and presence of potential jurisdictional drainage and/or wetland features were noted.

2.3 SOIL SERIES ASSESSMENT

On-site and adjoining soils were researched prior to the field visit using the USDA NRCS Soil Survey for San Bernardino County, California. In addition, a review of the local geological conditions and historical aerial photographs was conducted to assess the ecological changes the project site has undergone.

2.4 PLANT COMMUNITIES

Plant communities were mapped using 7.5-minute USGS topographic base maps and aerial photography. The plant communities were classified in accordance with Holland (1986), Sawyer et al. (2009), and CDFW (2010), delineated on an aerial photograph, and then digitized into GIS Arcview. The Arcview application was used to compute the area of each plant community in acres.

2.5 PLANTS

Common plant species observed during the field survey were identified by visual characteristics and morphology in the field and recorded in a field notebook. Unusual and less familiar plants were photographed and later identified in the laboratory using taxonomical guides. Taxonomic nomenclature used in this study follows the 2012 Jepson Manual. In this report, scientific names are provided immediately following common names of plant species (first reference only).

2.6 WILDLIFE

Wildlife species detected during field surveys by sight, calls, tracks, scat, or other sign were recorded during surveys in a field notebook. Field guides were used to assist with identification of species during surveys included The Sibley Field Guide to the Birds of Western North America (Sibley 2003) for birds, A Field Guide to Western Reptiles and Amphibians (Stebbins 2003) for herpetofauna, and A Field Guide to Mammals of North America (Reid 2006). Although common names of wildlife species are fairly well standardized, scientific names are provided immediately following common names in this report (first reference only).

2.7 JURISDICTIONAL AREAS

Aerial photography was reviewed prior to conducting the habitat assessment. The aerials were used to locate and inspect potential natural drainage features and water bodies that may be considered riparian or riverine habitat and/or fall under the jurisdiction of the U.S. Army Corps of Engineers (Corps), Regional Water Quality Control Board (Regional Board), or CDFW. In general, surface drainage features indicated as blue-line streams on USGS maps that are observed or expected to exhibit evidence of flow are considered potential riparian/riverine habitat and are also subject to state and federal regulatory authorities.

Section 3 Existing Conditions

3.1 LOCAL CLIMATE

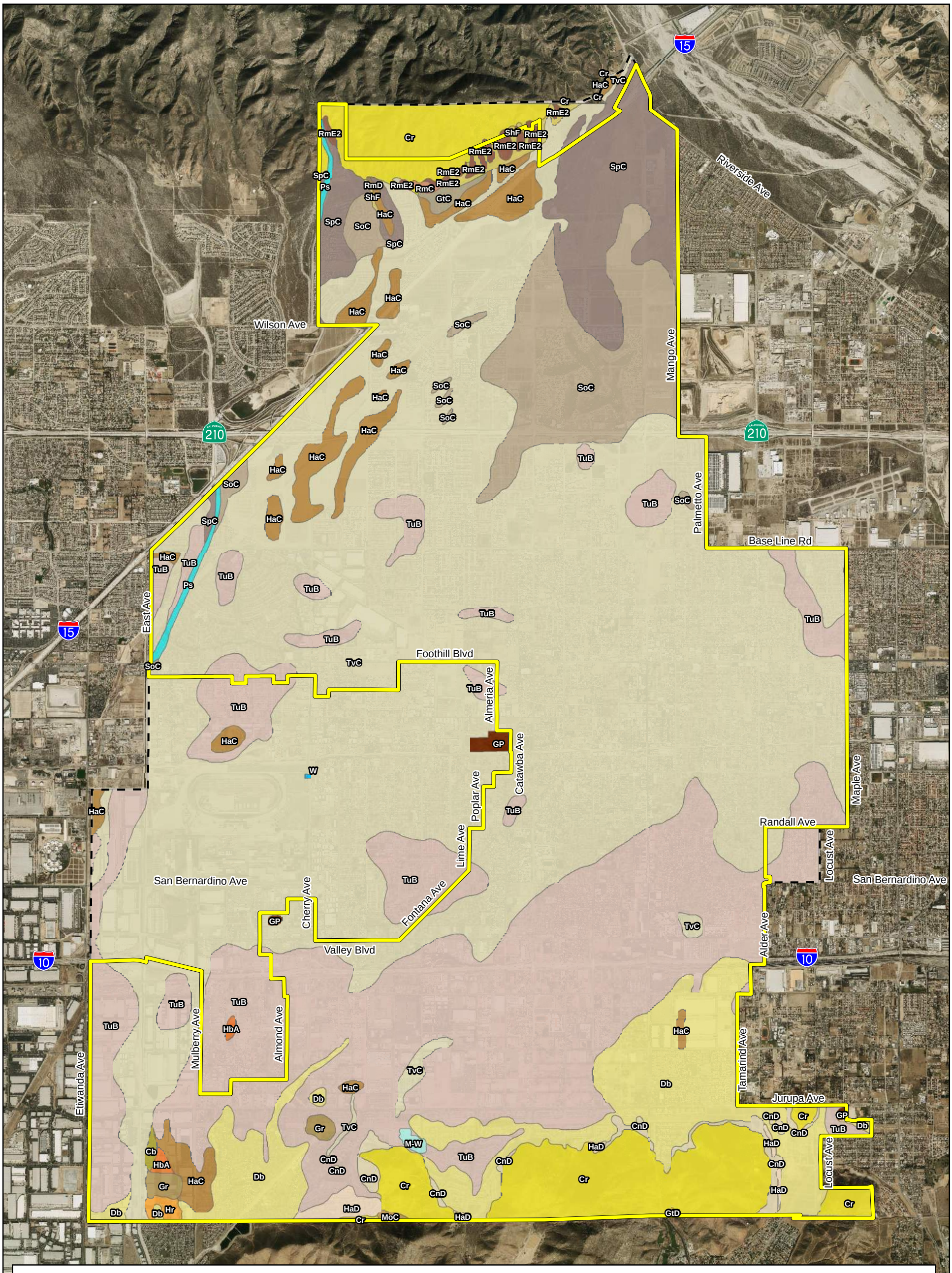
San Bernardino County features a somewhat cooler version of a Mediterranean climate, or semi-arid climate, with warm, sunny, dry summers and cool, rainy, mild winters. Relative to other areas in Southern California, winters are colder with chilly to cold morning temperatures. Climatological data obtained for the City of Fontana indicates the annual precipitation averages 14.77 inches per year (Intellicast 2015). Almost all of the precipitation occurs in the months between November and April, with hardly any occurring between the months of May and October. The wettest month is January, with a monthly average total precipitation of 3.50 inches. The average maximum and minimum temperatures for the City of Fontana are 95 and 44 degrees Fahrenheit respectively with July and August being the hottest months and December being the coldest.

3.2 TOPOGRAPHY AND SOILS

The City is relatively flat with the only significant areas of topographic relief being at the northern (San Gabriel Mountains) and southern (Jurupa Hills) city limits. On-site surface elevation ranges from approximately 850 to 2,740 feet above mean sea level and generally slopes to the southwest. Based on the USDA Soil Survey, the City of Fontana is underlain by the following soil units: Chino silt loam; Cieneba sandy loam (9 to 15 percent); Cieneba-Rock outcrop complex; Delhi fine sand; Trigo family-Lithic Xerorthents, warm complex (50 to 75 percent); Quarries and Pits soils; Grangeville fine sandy loam; Greenfield sandy loam (2 to 9 percent); Greenfield fine sandy loam (9 to 15 percent); Hanford sandy loam (0 to 2 percent); Hilmar loamy fine sand; Hanford coarse sandy loam (8 to 15 percent, eroded); Miscellaneous water; Monserate sandy loam (2 to 9 percent); Psamments, Fluvents and Frequently flooded soils; Ramona sandy loam (2 to 9 percent); Ramona sandy loam (9 to 15 percent); Ramona sandy loam (15 to 30 percent, eroded); Saugus sandy loam (30 to 50 percent); Soboba gravelly loamy sand (0 to 9 percent); Soboba stony loamy sand (2 to 9 percent); Tujunga loamy sand (0 to 5 percent); Tujunga gravelly loamy sand (0 to 9 percent); and Tujunga gravelly loamy sand (0 to 8 percent) (Exhibit 4, *Soils*).

3.3 SURROUNDING LAND USES

The City of Fontana is located in the region of California known as the "Inland Empire." Generally speaking, this region is heavily developed and industrialized and has undergone a conversion from natural habitats into residential, industrial, and commercial land uses. The San Bernardino National Forest is located immediately north of City limits, and the City contains the northernmost portion of the Jurupa Hills.



8/19/2015 JN M:\Mdata\148287\MXD\04 Soils.mxd

Michael Baker INTERNATIONAL

0 2,250 4,500 9,000 Feet

Source: San Bernardino County, NRCS Soils Data Mart, Eagle Aerial 2014

FONTANA GENERAL PLAN UPDATE
HABITAT ASSESSMENT

Soils

Exhibit 4

Section 4 Discussion

4.1 SITE CONDITIONS

Many of the original ecological habitats within the City limits and its sphere of influence have undergone considerable modification during the past 100 years. At the turn of the century, much of the area was used for agricultural production, primarily vineyards and orchards. Over the past 65 to 90 years, however, residential communities and industrial and commercial developments have been constructed, replacing most of the former agricultural and undeveloped lands.

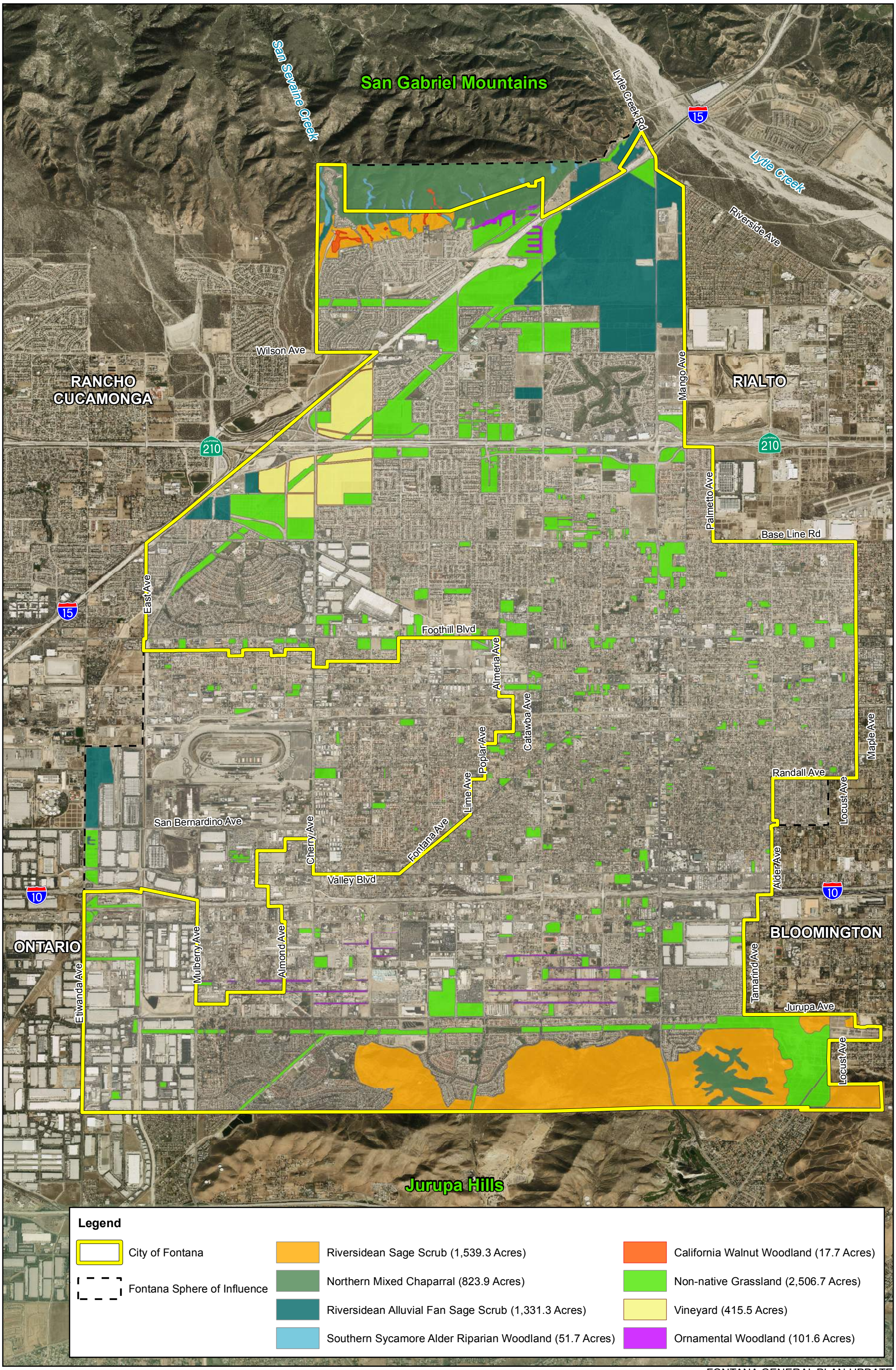
The entire Chino Basin, of which the City is a part, represents a unique biological condition known as an ecotone, defined as the area in which two separate ecological communities come together. In the Chino Basin, interior desert species from the northeast come into contact with coastal species from the south and west. The basin floor, foothills, and uplands north of the City limits support a diversity of flora and fauna.

4.2 VEGETATION

Eight (8) vegetation communities are present in open spaces within City limits: Riversidean Sage Scrub (RSS), Northern Mixed Chaparral, Riversidean Alluvial Fan Sage Scrub (RAFSS), Southern Sycamore Alder Riparian Woodland, California Walnut Woodland, Non-native Grassland, and Ornamental Woodland (Exhibit 5a, *Vegetated Open Spaces*). In addition there are two (2) land cover types that would be characterized as Disturbed or Developed (Exhibit 5b, *Disturbed and Developed Open Spaces*). Exhibits 5a and 5b only depict areas observed as open spaces on aerial imagery (Google Earth, dated 4/27/2014) and are intended to show the current states of those areas; they are not intended to depict cover types for areas that, according to aerial imagery, have already been developed except where those areas have since reverted back to open space. Areas mapped during the survey are described in further detail below.

4.2.1 Riversidean Sage Scrub (1,539.3 acres)

RSS is the most xeric expression of coastal sage scrub in southern California. It is the driest, most inland expression of the collection of sage scrub or coastal scrub series, and ranges throughout southern California south into Baja California between approximately 1,500 and 4,500 feet above mean sea level. This community consists primarily as a semi-arid scrub community of the valley floor, dominated by California sagebrush (*Artemisia californica*), white sage (*Salvia apiana*), black sage (*Salvia mellifera*), California buckwheat (*Eriogonum fasciculatum*), and California croton (*Croton californicus*). It gives way to northern mixed chaparral at about 1,700 feet elevation. Agricultural activities replaced the sage scrub



9/1/2015 JN M:\M data\148287\MXD\05 A Veg.mxd

Michael Baker INTERNATIONAL

0 2,500 5,000 10,000 Feet

Source: San Bernardino County, Eagle Aerial 2014

FONTANA GENERAL PLAN UPDATE
HABITAT ASSESSMENT

Vegetated Open Spaces

Exhibit 5 A

San Gabriel Mountains
San Sevaine Creek
Lytle Creek Rd
15
Lytle Creek
Riverside Ave
Wilson Ave
RANCHO CUCAMONGA
Mango Ave
RIALTO
210
210
Palmetto Ave
Base Line Rd
East Ave
15
Foothill Blvd
Almeria Ave
Catawba Ave
Poplar Ave
Lime Ave
Maple Ave
Randall Ave
Locust Ave
San Bernardino Ave
Cherry Ave
Fontana Ave
Valley Blvd
Alder Ave
10
10
ONTARIO
Etiwanda Ave
Mulberry Ave
Almond Ave
Tamarind Ave
BLOOMINGTON
Jurupa Ave
Locust Ave
Jurupa Hills

Legend

- City of Fontana
- Fontana Sphere of Influence
- Disturbed (367.1 Acres)
- Developed (556.0 Acres)

8/31/2015 JN M:\Mdata\148287\MXD\05 B Disturbed.mxd

Michael Baker INTERNATIONAL

0 2,500 5,000 10,000 Feet

Source: San Bernardino County, Eagle Aerial 2014

FONTANA GENERAL PLAN UPDATE
HABITAT ASSESSMENT

Disturbed and Developed Open Spaces

Exhibit 5 B

association with citrus groves, vineyards, and introduced plants, such as eucalyptus windows in the 19th century. Within City boundaries, RSS is present primarily in south Fontana in the Jurupa Hills, but also in north Fontana along the base of the San Gabriel Mountains.

4.2.2 Northern Mixed Chaparral (823.9 acres)

A mountainside community at an elevation of 1,700 to 6,000 feet, this chaparral community is composed of fire-adapted, broad-leaved shrubs. Dominant plants include chamise (*Adenostoma fasciculatum*), manzanita (*Arctostaphylos* spp.), coast live oak (*Quercus agrifolia*), California lilac (*Ceanothus* spp.), toyon (*Heteromeles arbutifolia*), holly-leaved cherry (*Prunus ilicifolia*), and Our Lord's candle (*Yucca whipplei*). Within City boundaries, northern mixed chaparral primarily occurs in the San Gabriel Mountains, where it is heavily dominated by chamise, but also occurs in south Fontana in high-elevation parts of the Jurupa Hills.

4.2.3 Riversidean Alluvial Fan Sage Scrub (1,331.3 acres)

RAFSS is described as open vegetation adapted to the harsh conditions of flooding within alluvial fans and outwashes. It is a subtype of the more widely known Coastal Sage Scrub and is the most inland group of the three southern geographic alluvial fan sage scrub plant communities. It grows on sandy, rocky alluvia deposited by streams that experience infrequent episodes of flooding at the base of the San Gabriel Mountains. The community is composed of drought-deciduous shrubs and evergreen woody shrubs, with a substantial herbaceous/wildflower understory. The RAFSS plant communities or habitats found within the City and its sphere of influence are considered a sensitive biological resource by several regulatory and conservation agencies including USFWS, CDFW, and CNPS.

There are three stages of RAFSS habitat: pioneer, intermediate, and mature. The City of Fontana contains both intermediate and mature RAFSS habitats. Within City boundaries, intermediate RAFSS is present in small areas between I-15 and Lytle Creek Road, off of Victoria Street east of I-15, and east of Etiwanda Avenue between San Bernardino Avenue and Napa Street. Mature RAFSS is present generally east of Citrus Avenue between I-15 and Summit Avenue.

Intermediate RAFSS. Mid-elevated locations above the active floodplain or on terraces are generally much less frequently flooded and therefore support relatively dense mid-successional (intermediate) plant species, primarily subshrubs. Characteristic species within intermediate RAFSS include California buckwheat, yerba santa (*Eriodictyon trichocalyx*), Palmer's goldenbush (*Ericameria palmeri*), white sage, pine-bush (*Ericameria pinifolia*), matchweed (*Gutierrezia californica*), deerweed (*Acmispon glaber*), California juniper (*Juniperus*

californica), yucca (*Yucca whipplei*), valley cholla (*Cylindropuntia californica*), and coastal prickly pear (*Opuntia littoralis*).

Mature RAFSS. Higher terraces experience minimal fluvial events and thus support late-successional (mature) plant species consisting of dense subshrubs and woody shrubs. Characteristic species within mature RAFSS include California sagebrush, prickly pear (*Opuntia parryi*), yerba santa (*Eriodictyon angustifolium*), chamise, deerweed, California buckwheat, sugar bush (*Rhus ovata*), and holly-leaved cherry (*Prunus ilicifolia*).

4.2.4 Southern Sycamore Alder Riparian Woodland (51.7 acres)

Trees commonly seen in this streamside woodland habitat include white alder (*Alnus rhombifolia*), western sycamore, black walnut (*Juglans californica*), cottonwood (*Populus fremontii*), mulefat (*Baccharis salicifolia*), arroyo willow (*Salix lasiolepis*), and black willow (*Salix gooddingii*). Within City boundaries, this diverse community of riparian species is present in San Sevaine Canyon and in other drainages on the south-facing side of the San Gabriel Mountains

4.2.5 California Walnut Woodland (17.7 acres)

The California walnut woodland community consists of California black walnut trees with an understory of alluvial scrub species. The walnut woodland generally appears as scattered walnut trees with an open canopy growing with sycamores. This plant community was once extensive throughout the foothills of southern California, but is now greatly diminished due to agriculture and urban development. California walnut woodlands are considered a sensitive habitat by CDFW. Within City boundaries, this plant community is found along the southern portion of San Sevaine Canyon and in other unnamed drainages on the south-facing side of the San Gabriel Mountains.

4.2.6 Non-Native Grassland (2,506.7 acres)

The non-native grasslands are disturbed or graded areas that have revegetated with opportunistic weedy species. These species include wild oat (*Avena barbata*), brome (*Bromus* spp.), and Mediterranean grass (*Schismus barbatus*), as well as some native wildflowers including popcornflower (*Cryptantha* spp.) and fiddleneck (*Amsinckia* spp.). Patches of native grasslands may be located in more protected areas within the northern portions of the City.

In developed areas, landscaping or a variety of annual grasses and weedy forbs have replaced native species. The non-native annual grass species found within the City include a variety of bromes: downy brome (*Bromus tectorum*), Australian chess (*B. arenarius*), ripgut brome (*B. diandrus*), and others. Bermuda grass (*Cynodon dactylon*) and Johnson grass (*Sorghum halepense*) also occur in the area. Forbs common to the area include Saharan mustard (*Brassica*

tournefortii), red-stemmed filaree (*Erodium cicutarium*), annual bur ragweed (*Ambrosia acanthicarpa*), and southern suncups (*Cammissonia bistorta*). In more disturbed areas, grasslands may be almost entirely overgrown with Russian thistle (*Salsola tragus*) and/or mustard. This habitat is particularly valuable to raptors and other avian species, including northern harriers (*Circus cyaneus*), BUOW, horned larks (*Eremophila alpestris*), red-tailed hawks (*Buteo jamaicensis*), ferruginous hawks (*Buteo regalis*), and loggerhead shrikes (*Lanius ludovicianus*). Within City boundaries, non-native grasslands are found in vacant lots throughout the City as well as in many larger, open fields north of Baseline Avenue.

4.2.7 Vineyard (415.5 acres)

Grape vineyards are generally vegetated with extensive rows of grapevines (*Vitis* sp.), although some also contain non-native grasses in the open spaces. Several vineyards are still in production. Within City boundaries, vineyards are located along the western boundary of the City, southeast of I-15 between Baseline Avenue to the south and Wilson Avenue/Beech Avenue to the north.

4.2.8 Ornamental Woodland (101.6 acres)

Ornamental woodlands are human-created woodlands using non-native trees and shrubs. Common species of trees found within ornamental woodlands throughout the City of Fontana include various species of gum tree (*Eucalyptus* spp.) as relict windrows that once provided wind breaks for agricultural activities, tamarisk (*Tamarix* spp.), and Peruvian pepper trees (*Schinus molle*). Several small ornamental woodlands and windrows exist throughout the City. Within City boundaries, ornamental woodlands and windrows are primarily present in the vicinity of I-15 and Citrus Avenue and between I-10 and Jurupa Avenue.

4.2.9 Disturbed (367.1 acres)

Disturbed areas generally encompass unpaved areas where vegetation has usually been cleared, such as for dirt paths or future development, or where the land cover is not conducive to significant vegetation growth, such as boulder fields. Within the City of Fontana, fallow agricultural areas represent a substantial proportion of the undeveloped land. These areas are in various stages of succession and are covered with non-native grasslands, emergent native vegetation, and exotics. Within City boundaries, disturbed areas are located in vacant lots throughout the City.

4.2.10 Developed (556.0 acres)

Developed areas generally encompass all buildings, as well as all paved, impervious surfaces. Developed areas in the City of Fontana primarily relate to paved roads, buildings, and structures. Within City boundaries, developed areas were mapped throughout the City as areas

that appeared to be vacant lots in recent aerial imagery, but were found during the July and August 2015 vegetation mapping to now be developed or under active construction.

4.3 WILDLIFE

Plant communities provide foraging habitat, nesting and denning sites, and shelter from adverse weather or predation. This section provides a discussion of those wildlife species observed, expected, or not expected to occur within the City. The discussion is to be used as a general reference and is limited by the season, time of day, and weather condition in which the survey was conducted. Wildlife observations were incidentally made during vegetation mapping and were based on calls, songs, scat, tracks, burrows and actual sightings of animals. A representative table of wildlife species that occur or may occur within the City is included in Appendix B, *Wildlife Species Occurring or Potentially Occurring in the City of Fontana*.

4.3.1 Fish

No fish were observed during the vegetation mapping, and very few hydrogeomorphic features (e.g., creeks, ponds, lakes, reservoirs) that would provide suitable habitat for fish were observed on or within the vicinity of the City. Those features that could provide suitable habitat for fish were mainly intermittent and ephemeral features located in the San Gabriel Mountains and the Jurupa Hills, as well as scattered drainages within the developed City. A small number of presumably perennial artificial basins/stock ponds were observed in north Fontana at the base of the San Gabriel Mountains. Because there is little to no perennial water within the City outside of the aforementioned artificial small ponds, few, if any, native fish populations are expected to be present.

4.3.2 Amphibians

No amphibians were observed during the vegetation mapping, and very few hydrogeomorphic features that would provide suitable habitat for amphibians were observed on or within the vicinity of the City. Those features that could provide suitable habitat for amphibians were mainly intermittent and ephemeral features located in the San Gabriel Mountains and the Jurupa Hills, as well as scattered drainages within the developed City. A small number of presumably perennial artificial basins/stock ponds were observed in north Fontana at the base of the San Gabriel Mountains. Amphibians most likely to occur within City limits include Baja California chorus frog (*Pseudacris hypochondriaca*), western toad (*Anaxyrus boreas*), and American bullfrog (*Lithobates catesbeianus*).

4.3.3 Reptiles

Three (3) reptilian species were detected during vegetating mapping, Great Basin fence lizard (*Sceloporus occidentalis longipes*), western side-blotched lizard (*Uta stansburiana elegans*),

and coastal whiptail (*Aspidoscelis tigris stejnegeri*). The City is mostly developed or heavily disturbed with limited natural or open habitat. Natural habitat types are primarily restricted to the northern and southern portions of the City, although disturbed open spaces and non-native grasslands are located in generally small parcels scattered throughout the City. The City has the potential to additionally support alligator lizard (*Elgaria multicarinata*), gopher snake (*Pituophis catenifer*), and southern Pacific rattlesnake (*Crotalus oreganus helleri*).

4.3.4 Avian

The City of Fontana provides suitable foraging and nesting habitat for a variety of avian species. A total of twenty-nine (29) avian species were incidentally detected during vegetation mapping. The species observed most commonly during vegetation mapping included rock pigeon (*Columba livia*), Eurasian collared-dove (*Streptopelia decaocto*), mourning dove (*Zenaida macroura*), American kestrel (*Falco sparverius*), black phoebe (*Sayornis nigricans*), American crow (*Corvus brachyrhynchos*), northern mockingbird (*Mimus polyglottos*), European starling (*Sturnus vulgaris*), house finch (*Haemorhous mexicanus*), lesser goldfinch (*Spinus psaltria*), and house sparrow (*Passer domesticus*).

4.3.5 Mammals

Only one mammal was detected during vegetation mapping: California ground squirrel (*Otospermophilus beecheyi*). The City provides suitable habitat primarily in the northern and southern portions of the City limits for a variety of mammalian species adapted to human presence and disturbance, although there is a high likelihood to have California ground squirrel in particular present in the small vacant lots that are scattered throughout the City. However, most mammal species are nocturnal and are difficult to observe during a diurnal field visit. Other mammal species that have the potential to occur within the City include Virginia opossum (*Didelphis virginiana*), desert cottontail (*Sylvilagus audubonii*), Botta's pocket gopher (*Thomomys bottae*), deer mouse (*Peromyscus* sp.), coyote (*Canis latrans*), and raccoon (*Procyon lotor*).

4.4 NESTING BIRDS

No nesting birds or breeding behaviors were observed during the July and August 2015 vegetation mapping, which was near the end of the typical avian nesting season. Vegetation within the City provides ample nesting opportunities for ground-, shrub-, and tree-nesting avian species throughout both native and non-native vegetation communities, including developed areas.

4.5 MIGRATORY CORRIDORS AND LINKAGES

Habitat linkages provide links between larger habitat areas that are separated by development. Wildlife corridors are similar to linkages, but provide specific opportunities for animals to disperse or migrate between areas. A corridor can be defined as a linear landscape feature of sufficient width to allow animal movement between two comparatively undisturbed habitat fragments. Adequate cover is essential for a corridor to function as a wildlife movement area. It is possible for a habitat corridor to be adequate for one species yet, inadequate for others. Wildlife corridors are significant features for dispersal, seasonal migration, breeding, and foraging. Additionally, open space can provide a buffer against both human disturbance and natural fluctuations in resources.

Historically, the City provided movement in both north-south and east-west directions. The land within the City of Fontana provided a connection between the nearby San Bernardino and San Gabriel Mountains to the Chino Basin in the south. The City also sits along the eastern portion of the San Gabriel Mountains. This area supports wildlife movement along the mountain foothills to the western portion of the San Gabriel Mountains, as well as access to the San Bernardino Mountains. Currently, the City of Fontana is mostly developed, with most of the land converted from open space areas to commercial, industrial, residential, and recreational uses. Wildlife movement on a north-south regional basis has ceased due to the development of the valley floor.

Wildlife movement in an east-west orientation along the foothills north of I-15 is still a viable wildlife corridor. Although the Jurupa Hills provide habitat for many species of plants and animals, they function as an ecological island, allowing no significant movement except as stepping stones between fragmented natural areas to the south in Riverside County and San Bernardino County to the north. Habitat in Riverside County is managed under the Western Riverside County Multiple Species Habitat Conservation Plan. The majority of the habitat in the City is extensively developed and major wildlife movement within the City is not likely to occur.

4.6 JURISDICTIONAL AREAS

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The Corps Regulatory Branch regulates discharge of dredge and/or fill materials into “waters of the United States” pursuant to Section 404 of the Federal CWA and Section 10 of the Rivers and Harbors Act. Of the State agencies, the CDFW regulates alterations to streambed and associated plant communities pursuant to Section 1602 of the Fish and Game Code, and the Regional Board regulates discharges into surface waters pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

The City contains at least five (5) areas determined to be "waters of the U.S." and/or "waters of the State" and areas of wetlands (Exhibit 6, *Jurisdictional Areas*). These areas fall under the jurisdiction of the Corps and/or CDFW. Additionally, areas of CDFW jurisdictional riparian resources occur within the City. There are three (3) main drainage features flowing from the foothills in the northern section of the City and two (2) or three (3) small drainages in the south, which flow from the Jurupa Hills. Within the developed areas are two (2) main drainage features, which have been previously modified for flood control measures. Flood control and water conservation basins are included on Exhibit 6, as they ultimately aid in the eventual movement of waters toward the Santa Ana River.

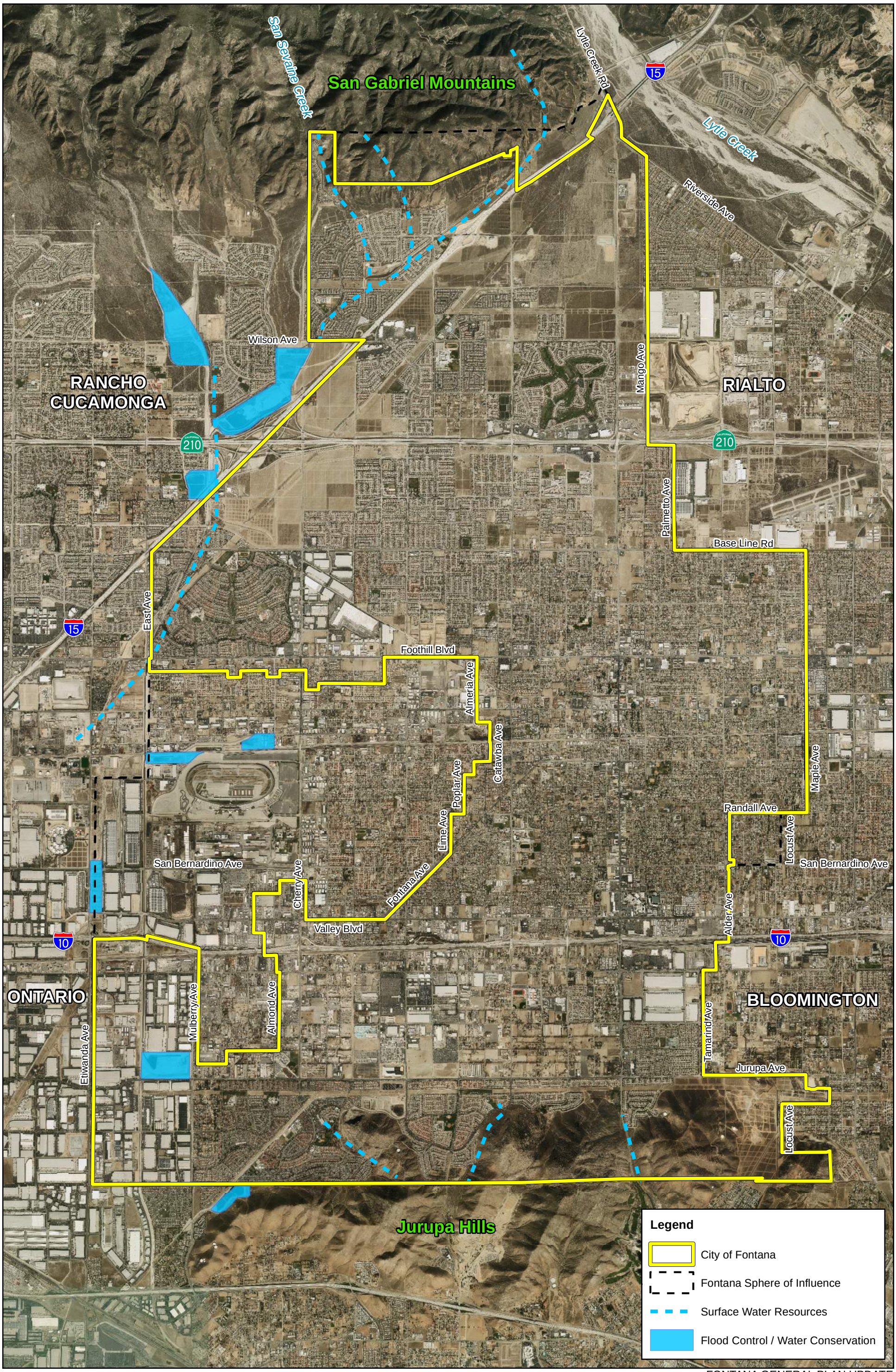
4.7 SENSITIVE BIOLOGICAL RESOURCES

The CNDDB was queried for reported locations of listed and sensitive plant and wildlife species as well as sensitive natural plant communities in the Cucamonga Peak, Devore, Fontana, and Guasti USGS 7.5-minute quadrangles. A search of published records of these species was conducted within these quadrangles using the CNDDB Rarefind 5 online software. The CNPS Inventory of Rare and Endangered Vascular Plants of California supplied information regarding the distribution and habitats of vascular plants in the vicinity of the City. The habitat assessment was used to assess the ability of the plant communities found on-site to provide suitable habitat for relevant sensitive plant and wildlife species.

The literature search identified thirty-three (33) sensitive plant species, thirty-eight (38) sensitive wildlife species, and five (5) sensitive habitats as having potential to occur within the Cucamonga Peak, Devore, Fontana, and Guasti quadrangles. Sensitive plant and wildlife species were evaluated for their potential to occur within or adjacent to the City limits based on habitat requirements, availability and quality of suitable habitat, and known distributions. Species determined to have the potential to occur within the general vicinity are presented in Appendix C, *Potentially Occurring Sensitive Biological Resources*, and discussed below.

4.7.1 Sensitive Plants

According to the CNDDB and CNPS, thirty-three (33) sensitive plant species have been recorded in the Cucamonga Peak, Devore, Fontana, and Guasti quadrangles (refer to Appendix C). The City has limited native plant communities, consisting mostly of non-native grasslands interspersed with developed and highly disturbed areas. However, there is still native habitat primarily north of Summit Avenue and south of Jurupa Avenue where sensitive plant species may still occur. There is limited, if any, suitable habitat for sensitive plant species throughout the developed portions of the City. Based on known recent distribution records, two (2) sensitive plant species have been documented as present within the City of Fontana: Plummer's mariposa lily (*Calochortus plummerae*) and Parry's spineflower (*Chorizanthe parryi var. parryi*). Based on habitat requirements for specific species and the availability and quality of



8/19/2015 JN M:\Mdata\148287\MXD\06 Jurisdictional Areas.mxd

Michael Baker INTERNATIONAL

0 2,250 4,500 9,000 Feet

Source: San Bernardino County, Eagle Aerial 2014, Fontana General Plan

FONTANA GENERAL PLAN UPDATE
HABITAT ASSESSMENT

Jurisdictional Areas

Exhibit 6

habitats needed by each sensitive plant species, it was determined that there is a moderate potential for three (3) sensitive plant species to occur within City limits: mesa horkelia (*Horkelia cuneata var. puberula*), Robinson's pepper-grass (*Lepidium virginicum var. robinsonii*), and short-joint beavertail (*Opuntia basilaris var. brachyclada*). The remaining twenty-eight (28) sensitive plant species have a low potential to occur within City limits or are presumed absent. Brief species accounts are provided below for those plant species with a moderate or higher potential to occur within City limits.

Plummer's Mariposa Lily

Plummer's mariposa lily is a perennial bulbiferous herb that flowers between May and July. It is not state or federally listed. However, it is designated by the CNPS with the Rare Plant Rank 4.2, indicating that it is a plant of limited distribution and is considered fairly threatened in California, with 20-80% of its known occurrences threatened. It was previously designated with the Rare Plant Rank 1B.2 (plants rare, threatened, or endangered in California and elsewhere), but was found to be more common than had previously been thought. It is endemic to California and is known to occur in Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties, where it can be found in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest in granitic or rocky soils between 328 and 5,577 feet in elevation. Plummer's mariposa lily was documented in 2004 within City boundaries in upper San Sevaine Creek, in 2001 immediately west of City boundaries in San Sevaine Creek, and has been documented in numerous locations in the San Gabriel Mountains immediately north of City boundaries and in the Jurupa Hills immediately south of City boundaries. It is expected to be present within City boundaries, particularly in RSS and chaparral in north and south Fontana in the San Gabriel Mountains and Jurupa Hills, respectively.

Parry's Spineflower

Parry's spineflower is an annual herb that flowers between April and June. It is not state or federally listed. However, it is designated by the CNPS with the Rare Plant Rank 1B.1, indicating that is rare, threatened, or endangered in California and elsewhere, and is seriously endangered in California with over 80% of its known occurrences threatened. It is endemic to California and is only known from Los Angeles, Riverside, and San Bernardino Counties. It occurs in sandy or rocky openings in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland at elevations between 131 and 5,594 feet. Parry's spineflower was documented from 1999-2012 in a widely scattered area east of Sierra Avenue and south of Riverside Avenue, adjacent to an area that has now been developed. It is presumed to still be extant at this location and within City boundaries, where it may also occur in RSS and chaparral in north and south Fontana in the San Gabriel Mountains and Jurupa Hills, respectively.

Mesa Horkelia

Mesa horkelia is a perennial herb that flowers between February and September. It is not state or federally listed. However, it is designated by the CNPS with the Rare Plant Rank 1B.1, indicating that is rare, threatened, or endangered in California and elsewhere, and is seriously endangered in California with over 80% of its known occurrences threatened. It is endemic to California and is only known from Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, San Luis Obispo, and Ventura Counties, although it is presumed extirpated in Riverside and San Diego Counties. It occurs in sandy or gravelly soils in maritime chaparral, cismontane woodland, and coastal scrub at elevations between 230 and 2,657 feet. Within City boundaries, mesa horkelia has a moderate potential to occur primarily in south Fontana in the Jurupa Hills.

Robinson's Pepper-grass

Robinson's pepper-grass is an annual herb that flowers between January and July. It is not state or federally listed. However, it is designated by the CNPS with the Rare Plant Rank 4.3, indicating that it is a plant of limited distribution and is not very threatened in California, with less than 20% of its known occurrences threatened. It was previously designated with the Rare Plant Rank 1B.2 (plants rare, threatened, or endangered in California and elsewhere), but was found to be more common than had previously been thought. In California it is known from Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, and Ventura Counties, as well as on Santa Cruz Island. It occurs in chaparral or coastal scrub at elevations between 3 and 2,904 feet. Robinson's pepper-grass was documented in 1998 immediately south of City boundaries in the Jurupa Hills, where it was described as being "common." It has a moderate potential to occur within City boundaries in the Jurupa Hills.

Short-joint Beavertail

Short-joint beavertail is a perennial stem succulent that flowers between April and August. It is not state or federally listed. However, it is designated by the CNPS with the Rare Plant Rank 1B.2, indicating that is rare, threatened, or endangered in California and elsewhere, and is considered fairly threatened in California, with 20-80% of its known occurrences threatened. It is endemic to California and is only known from Los Angeles and San Bernardino Counties. It occurs in chaparral, Joshua tree woodland, Mojavean desert scrub, and pinyon-juniper woodlands at elevations between 1,394 and 5,906 feet. Within City boundaries, short-joint beavertail has a moderate potential to occur in north Fontana in the chaparral in the San Gabriel Mountains.

4.7.2 Sensitive Wildlife

According to the CNDDB, thirty-eight (38) sensitive wildlife species have been reported in the Cucamonga Peak, Devore, Fontana, and Guasti quadrangles (refer to Appendix C). Based on

known distribution records and/or direct observation, thirteen (13) sensitive wildlife species are known to regularly occur within the City of Fontana and are assumed to be present, including Cooper's hawk (*Accipiter cooperii*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), golden eagle (*Aquila chrysaetos*), Bell's sparrow (*Artemisiospiza belli*), BUOW, northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), northern harrier, California horned lark (*Eremophila alpestris actia*), loggerhead shrike (*Lanius ludovicianus*), Los Angeles pocket mouse (*Perognathus longimembris brevinasus*), coast horned lizard (*Phrynosoma blainvillii*), CAGN, and DSF. Based on habitat requirements for specific species and the availability and quality of habitats needed by each sensitive wildlife species, it was determined that there is a moderate or high potential for an additional nine (9) sensitive wildlife species to occur, including silvery legless lizard (*Anniella pulchra pulchra*), orange-throated whiptail (*Aspidoscelis hyperythra*), Swainson's hawk (*Buteo swainsoni*), red-diamond rattlesnake (*Crotalus ruber*), western mastiff bat (*Eumops perotis californicus*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), San Diego desert woodrat (*Neotoma lepida intermedia*), southern grasshopper mouse (*Onychomys torridus ramona*), and yellow warbler (*Setophaga petechia*). The remaining sixteen (16) sensitive wildlife species have a low potential to occur within City limits or are presumed absent. Brief species accounts are provided below for those wildlife species with a moderate or higher potential to occur within City limits. Although it has a low potential to occur, a species account is provided for SBKR due to its regional significance.

Cooper's Hawk

Cooper's hawk is designated by the CDFW as a species of special concern. This species is often seen in wooded urban areas and native woodland communities. Preferred nesting habitats include oak and riparian woodlands dominated by sycamores and willows. Suitable foraging habitat for this bird can be found throughout Fontana. Cooper's hawks prey on small birds and rodents that live in woodland and occasionally scrub and chaparral communities. This species is well-adapted to urban environments. Cooper's hawk is known to be a year-round resident in the City and should be considered to be present throughout the City, particularly where ornamental woodlands abut non-developed habitat.

Southern California Rufous-crowned Sparrow

Southern California rufous-crowned sparrow is designated by the CDFW as a watch list species. Its primary habitat consists of moderate to steep slopes covered in relatively open coastal sage scrub, with grasses and rocks interspersed throughout. It can also be found in chaparral or in canyons. Dense stands of sage scrub and chaparral are typically avoided. Rufous-crowned sparrow nests either on the ground, in a depression in the ground, or very low in bushes (up to 45 cm off the ground). In most cases nests are built underneath bunchgrass or shrubs, though they can also be constructed under rock overhangs. This subspecies breeds from late February or early March until early September. Southern California rufous-crowned

sparrow is known to be a year-round resident in the City and should be considered present in south Fontana in the Jurupa Hills.

Silvery Legless Lizard

Silvery legless lizard is designated by the CDFW as a California species of special concern. It ranges from the Bay Area south into Baja California, and from the Pacific Coast east into the West Mojave Desert. It typically occurs in sand or sandy-loam soils, sometimes those with gravel, stones, or boulders mixed in, and usually with leaf litter on top. Soil moisture is crucial. Most of their lives are spent underground, where they use heat from surrounding sand and soil to warm themselves. Preferred temperatures are between 20° Celsius (C) and 25°C, with inactivity occurring below 13°C and death at above 34°C. Young are born between September and November. There may be suitable habitat for this species along drainages leaving the San Gabriel Mountains. Within City boundaries, silvery legless lizard has a moderate potential to occur, particularly around riparian corridors that are more likely to hold subsurface moisture. These areas occur primarily in north Fontana in the drainages coming out of the San Gabriel Mountains.

Golden Eagle

Golden eagle is designated by the CDFW as both a fully protected and watch list species. Golden eagles are year-round residents of southern California that prefer open habitats of the deserts, mountains, foothills, and plains. While it may occur in woodland-brushlands and coniferous forests, it typically avoids heavily forested areas. Their nests are most often located in isolated areas, either on cliff ledges or in large, solitary trees (e.g. eucalyptus trees) and occasionally in utility structures. The golden eagle nesting season typically extends from late March to the end of August. Golden eagle is known to be a year-round resident in and adjacent to the City, where it has been previously observed foraging along I-15 in grasslands and RAFSS habitat at the base of the San Gabriel Mountains. The Jurupa Hills may also provide suitable foraging habitat. Golden eagle should be considered to be intermittently present within City boundaries, primarily in open, natural communities along I-15 and in the Jurupa Hills.

Bell's Sparrow

Bell's sparrow is designated by the CDFW as a watch list species. Though the bird was formerly a subspecies of the sage sparrow called Bell's sage sparrow, it is presumed that as a distinct species it is still placed on the CDFW watch list (the split in taxonomy has not yet been recognized by CDFW). It is most often found in coastal lowlands, inland valleys, and in foothills. In its northern range in California this species is generally found in dense chamise chaparral, but can also be found in coastal scrub and in brushy washes. On the other hand, in its southern range it can typically be found in stands of big sagebrush (*Artemisia tridentata*) in high-elevation mountain ranges. Nests are typically constructed within shrubs. Bell's sparrow

is known to be a year-round resident in the City and should be considered present in RSS and chaparral in north and south Fontana in the San Gabriel Mountains and Jurupa Hills, respectively, as well as in the RAFSS habitat in north Fontana.

Orange-throated Whiptail

Orange-throated whiptail is designated by the CDFW as a species of special concern. It occurs in open sage scrub or chaparral where loose soils and occasional rocky areas are found. It is known to occur in Orange, western Riverside, and southwestern San Bernardino Counties. This species has a moderate potential to occur in particularly in RSS in the Jurupa Hills but also in chaparral in the San Gabriel Mountains.

Burrowing Owl

The burrowing owl is designated by the CDFW as a California species of special concern. It is a grassland specialist distributed throughout western North America where it occupies open areas with short vegetation and bare ground within shrub, desert, and grassland environments. Burrowing owls use a wide variety of arid and semi-arid environments with well-drained, level to gently-sloping areas characterized by sparse vegetation and bare ground. They are dependent upon the presence of burrowing mammals (such as ground squirrels) for roosting and nesting habitat. The presence or absence of colonial mammal burrows is often a major factor that limits the presence of burrowing owls. Where mammal burrows are scarce, burrowing owls have been found occupying man-made cavities, such as buried and non-functioning drain pipes, stand-pipes, and dry culverts. Small mammals may also burrow beneath rocks and debris or large, heavy objects such as abandoned cars, concrete blocks, or concrete pads. This species requires open vegetation allowing line-of-sight observation of the surrounding habitat to forage as well as watch for predators. The burrowing owl nesting season generally extends from mid-March to the end of August. Burrowing owl is known to be a year-round resident in the City and in adjacent areas and should be considered present. It is most likely to occur in the northern portion of the City where there are extensive open grasslands, as well as along a series of flood control basins along Etiwanda Avenue and in many of the vacant lots throughout the City.

Swainson's Hawk

Swainson's hawk is listed as threatened under the California Endangered Species Act. With the exception of the Antelope Valley, it is strictly a migrant in southern California, only passing through between North America and South America. During migration, this species can often be found utilizing grasslands or agricultural fields for foraging, as well as manmade structures and trees for perching or overnight roosting. Swainson's hawks typically pass through southern California on their spring migration from mid-March to May (though may sometimes start in early March) and on their fall migration from mid-August to early October (though may be as extreme as late July to late October). Swainson's hawk has been documented passing through

Fontana and its general vicinity (especially Glen Helen Regional Park) on numerous occasions in recent years and has a high potential to occur in or adjacent to the City as a transitory migrant with possible brief stopovers. It is most likely to occur in north Fontana where high winds can provide soaring conditions for migrating birds. Suitable foraging habitat is present in the northern portion of the City where there are large open grasslands. This species would only occur in the City during its migration and would not stay for any appreciable amount of time.

Northwestern San Diego Pocket Mouse

Northwestern San Diego pocket mouse is designated by the CDFW as a species of special concern. This small rodent prefers open, sandy areas in the valleys and foothills or southwestern California. Typical habitat includes sage scrub, sage scrub/grassland ecotones, and chaparral, often where there are gravelly or rocky substrates. The breeding season reaches its peak in spring and early summer. Its range extends from Orange County to San Diego County and includes portions of Riverside and San Bernardino Counties. Northwestern San Diego pocket mouse is known to be a year-round resident in the City and should be considered present in north Fontana, primarily in the RAFSS habitat south of I-15.

Northern Harrier

Northern harrier is designated by the CDFW as a species of special concern. This species is a year-round resident of southern California. It nests on the ground in open areas such as grasslands and agricultural fields. It also forages in these habitats, but also forages in areas with low-growing shrubs such as Riversidean sage scrub. Northern harrier is known to occur in the City and should considered present, particularly in open habitat in north Fontana including grasslands, RSS, chaparral, and RAFSS, as well as in south Fontana in the Jurupa Hills.

Red-diamond Rattlesnake

The red-diamond rattlesnake is designated by the CDFW as a California species of special concern. It is generally present in Orange, Riverside, and San Diego Counties, with small extensions into Los Angeles, San Bernardino, and Imperial Counties. This species is generally found in pristine coastal sage scrub, chaparral, pinyon-juniper woodlands, and desert. It may be active throughout the year but peak activity times are between April and October or November, particularly between April and June. Breeding typically occurs from March to May, with young born in August and September. Within City boundaries, there is suitable habitat for red-diamond rattlesnake to occur in RSS and chaparral in north and south Fontana in the San Gabriel Mountains and Jurupa Hills, respectively.

San Bernardino Kangaroo Rat

SBKR is listed as endangered under the Endangered Species Act and is designated by the CDFW as a species of special concern. It is one of several kangaroo rat species that could occur within the City's vicinity, which is no longer subject to the required fluvial (water) processes to support much of the habitat that these species require. SBKR habitat is described as being confined to primary and secondary alluvial fan scrub habitats, with sandy soils deposited by fluvial rather than Aeolian (wind) processes. Burrows are dug in loose soil, usually near or beneath shrubs. The historic drainage system in the northern portion of the City has been historically altered as a result of flood control efforts. This has resulted in a reduction in both the amount and quality of SBKR habitat.

The City appears to contain some suitable habitat for SBKR and is within designated Critical Habitat for the species (72 FR 72010 72213), but does not offer sufficient quantity and quality of habitat needed for the long-term preservation of the species. Fontana, which historically was subjected to alluvial processes, no longer receives floodwaters. Flood control structures protect the area from the hydrological processes of nearby fluvial systems. Currently, there is no evidence of any active hydrologic processes in the area although suitable habitat for SBKR remains (primarily in the northern portion of the city where there is still somewhat extensive and relatively undisturbed RAFSS habitat present). Although a single SBKR was trapped in 2002, several dozen surveys since that time have been negative for this species. SBKR has a low potential to occur within City boundaries, but if present is most likely to occur in RAFSS habitat.

California Horned Lark

The California horned lark is designated by the CDFW as a California watch list species. While horned larks are year-round residents throughout most of the United States and Mexico and breeding residents in much of Canada, the "California" subspecies only occurs west of the coastal ranges of California and northern Baja California. Horned larks generally occur in open areas, most often in shortgrass habitats or areas characterized by other low-growing vegetation. They may be found in disturbed, ruderal areas or even on manicured lawns (e.g. city parks and baseball fields). The horned lark breeding period generally extends from mid-February to mid-August. This species was observed during Michael Baker's 2015 vegetation mapping and should be considered present. Within City boundaries, it is most likely to be found in open non-native grasslands and disturbed fields.

Western Mastiff Bat

The western mastiff bat is designated by the CDFW as a California species of special concern. Its range in California extends across the entire southern California counties, as well as the Central Coast counties and up the Sierra Nevada. This species is found in a variety of different

habitats, including desert scrub, chaparral, oak woodland, and coniferous forests. However, the one element that these habitats have in common is the presence of rocky outcrops. Rocky outcrops are imperative for this species for roosting purposes, although it may use cracks in buildings if necessary. Roosting areas must have at least 10 feet of open space underneath for bats to drop out of during flight. Roosting is colonial, with colony sizes being fewer than 100 individuals and in many cases fewer than 20 individuals. Western mastiff bats mate in the spring and give birth to a single young in early to mid-summer, typically by early July. Within City boundaries, there is suitable habitat for western mastiff bat in the northern, open areas of the City, where it has a moderate potential to occur.

Loggerhead Shrike

The loggerhead shrike is designated by the CDFW as a California species of special concern. It is generally a year-round resident throughout the southern United States and a summer resident throughout much of the northern United States. Typical habitat preferences include open countryside with short vegetation, especially areas that have perches with expansive viewpoints, including pastures, old orchards, roadsides, cemeteries, golf courses, agricultural fields, riparian areas, and open woodlands. The nesting season is generally from the beginning of February through the end of July. Loggerhead shrike is known to be a year-round resident in the City and in adjacent areas and should be considered present, particularly in natural areas with open space and shrubs for perching and nesting. It is most likely to occur in north Fontana in the RAFSS habitat.

San Diego Black-tailed Jackrabbit

The San Diego black-tailed jackrabbit is designated by the CDFW as a California species of special concern. Its distribution is restricted to the coastal side of the Transverse Ranges between Los Angeles and San Diego Counties. Typical habitat includes arid areas with shortgrass vegetation, Riversidean sage scrub, RAFSS, chaparral, disturbed areas, and agriculture, as well as occasionally near willow scrub or juniper woodlands. Breeding can occur generally throughout the entire year, particularly in the more southerly regions of the species' range. Within City boundaries, San Diego black-tailed jackrabbit has a high potential to occur in areas that contain sage scrub species, particularly in north Fontana along the base of the San Gabriel Mountains and in south Fontana in the Jurupa Hills.

San Diego Desert Woodrat

The San Diego desert woodrat is designated by the CDFW as a California species of special concern. Its distribution is restricted to the coastal side of the Transverse Ranges between San Luis Obispo and San Diego Counties. This species is associated with a variety of arid shrub and desert habitats, particularly those with rock outcrops, boulders, cacti, or areas of dense undergrowth or large shrubs that can be used to build middens around. The most common

habitats used include chaparral, coastal sage scrub, and grassland, although oak woodlands and pinyon-juniper woodlands may be used as well. Breeding can evidently occur year-round, though it appears to peak between November and April. Within City boundaries, San Diego desert woodrat has a moderate potential to occur in areas that contain sage scrub species, particularly in north Fontana along the base of the San Gabriel Mountains and in south Fontana in the Jurupa Hills.

Southern Grasshopper Mouse

The southern grasshopper mouse is designated by the CDFW as a California species of special concern. It is found generally throughout the entire southern half of California, although it is absent along the Central Coast. Habitat preferences include alkali desert scrub, desert washes, riparian areas, coastal scrub, and mixed chaparral, preferentially areas with low to moderate shrub cover. Breeding can occur year-round but generally peaks between May and July. Within City boundaries, southern grasshopper mouse has a moderate potential to occur in areas that contain sage scrub species, particularly in north Fontana along the base of the San Gabriel Mountains and in south Fontana in the Jurupa Hills.

Los Angeles Pocket Mouse

The Los Angeles pocket mouse is designated by the CDFW as a California species of special concern. Its current range has changed little from its historic distribution, as it is still known from the Etiwanda Wash east to Cabazon and south through the San Jacinto and Temecula Valleys to Aguanga, Warner Pass, Vail, and Temecula; historically it was also known in the San Fernando Valley and may still occur in un-surveyed areas. This species occurs in low elevation grasslands, alluvial sage scrub, and coastal sage scrub, particularly areas with fine, sandy soils. It hibernates between October and February. The breeding period generally extends throughout the non-dormant period. Los Angeles pocket mouse is known to occur in the City within the wash along Etiwanda Avenue and should be considered present.

Coast Horned Lizard

The coast horned lizard is designated by the CDFW as a California species of special concern. It ranges throughout coastal California and Baja California. It is most often found in chaparral, sage scrub, oak woodland, and coniferous forest, often in sandy washes or amongst shrubby vegetation that it can use for cover, especially where harvester ants (*Pogonomyrmex* spp.) are found. The activity period for adults typically begins in March when males emerge from brumation, ending in September when females retreat; hatchlings are born beginning in late July and will stay active until November. Horned lizards bury themselves in the sand during periods of inactivity. Coast horned lizard is known to occur in the City and should be considered present. It is most likely to occur in north Fontana in chaparral, RSS, RAFSS, and grassland habitat, as well as in the RSS habitat of the Jurupa Hills in south Fontana.

Coastal California Gnatcatcher

Coastal California gnatcatcher is a federal threatened subspecies of the California gnatcatcher and is designated by the CDFW as a California species of special concern. It is the only subspecies of California gnatcatcher in southern California and is a year-round resident. This species is strongly associated with coastal sage scrub, but in the nonbreeding season will expand its home range and utilize adjacent chaparral and riparian habitat, particularly to help with fledgling dispersal. It prefers communities dominated by California sagebrush. It generally occurs below 750 feet in elevation along the coast and below 1,500 feet in inland areas. The general nesting season extends from the beginning of March through mid-August. Suitable habitat for CAGN is present in both the northern and southern City limits where RSS grows in the San Gabriel Mountains and Jurupa Hills, respectively. CAGN is known to be a year-round resident in the City and should be considered present in south Fontana in the Jurupa Hills, with a low potential to occur in the RSS, chaparral, and RAFSS habitats of north Fontana.

Delhi Sands Flower-loving Fly

This relatively large insect historically occurred in an area approximately 40 square miles in northwestern Riverside and San Bernardino Counties. The habitat for this endangered fly is limited to areas containing Delhi fine sand, an Aeolian soil type. DSF requires these soils for egg laying, and disturbances to these soils, particularly for agriculture and urban development, are the primary causes of this species' decline. DSF forages on the nectar of several plant species, but is often associated with a sparse cover of California buckwheat, California croton, telegraph weed (*Heterotheca grandiflora*), and other species. Suitable habitat for DSF is located along the City's southern boundary in the Jurupa Hills, particularly along the southern terminus of Poplar Avenue and along the northern Jurupa Hills between Citrus and Sierra Avenues, where the 30.9-acre Jurupa Hills Conservation Site and the 11.8-acre Mary Vagle Conservation Site, respectively, have been set aside as preserves specifically for this species under USFWS Biological Opinion (BO) FWS-SB-1788.9. DSF is known to occur in the City and should be considered present in south Fontana on the conservation sites.

Yellow Warbler

The yellow warbler is designated by the CDFW as a California species of special concern. This designation applies jointly to the *brewsteri* subspecies, which occurs along the Pacific Coast from northern Baja California to south of Victoria Island in Washington, and the *morcomi* subspecies, which occurs from southeast British Columbia down the western U.S. and into northern Baja California. This species is a summer migrant to southern California, inhabiting riparian woodlands throughout southern California. This species typically retreats to montane habitats for breeding, although some individuals will remain in lowland areas. The yellow warbler nesting period generally extends from mid-March to early August. There is suitable

habitat for this species in the northern limits of the City, where riparian drainages exit the San Gabriel Mountains. Yellow warbler has a moderate potential to occur, primarily in north Fontana along the riparian drainages coming out of the San Gabriel Mountains.

4.7.3 Sensitive Plant Communities

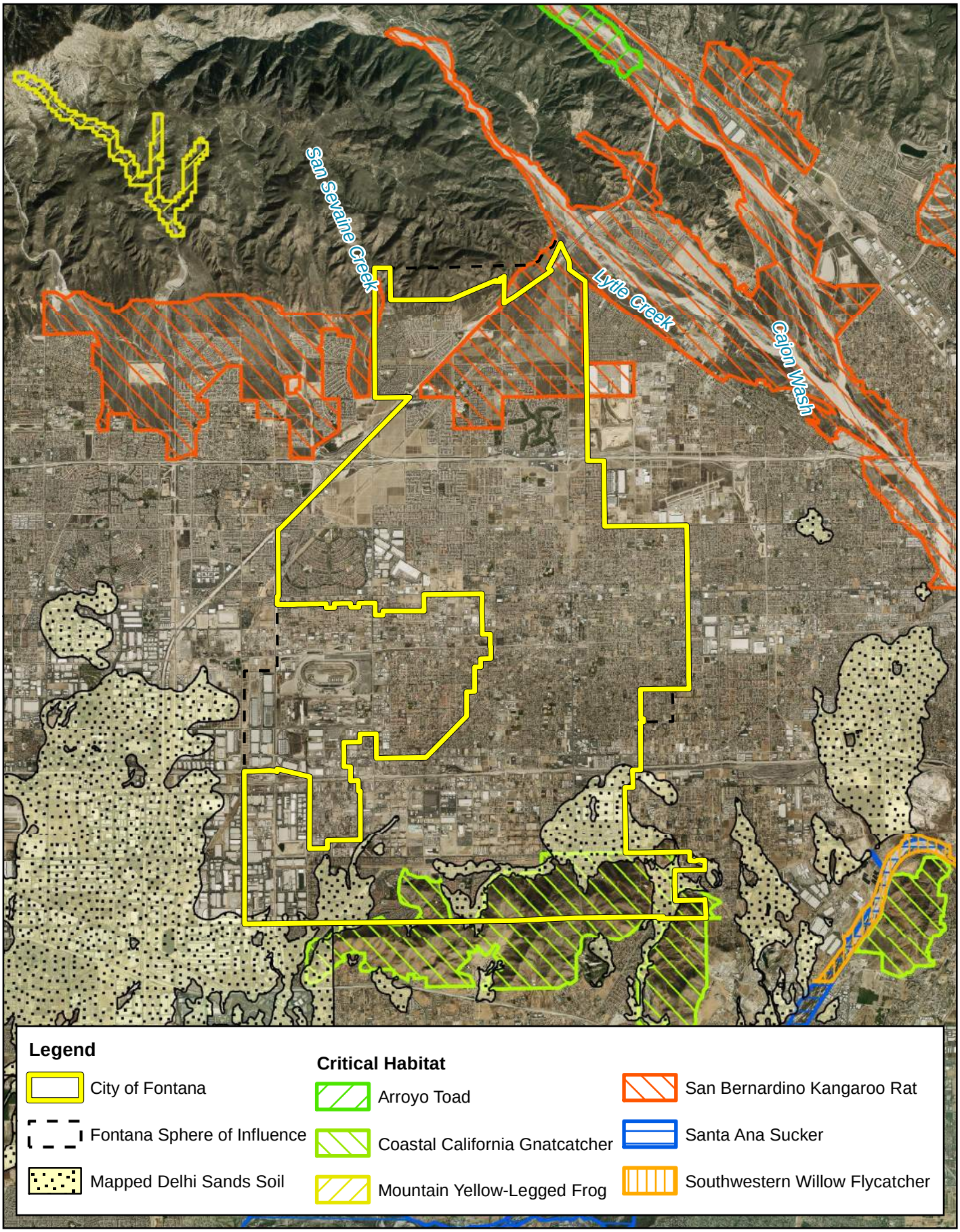
The CNDDB lists five (5) sensitive habitats as being identified within the Cucamonga Peak, Devore, Fontana, and Guasti quadrangles: California Walnut Woodland, Coastal and Valley Freshwater Marsh, RAFSS, Southern Riparian Forest, and Southern Sycamore Alder Riparian Woodland. California Walnut Woodland, RAFSS, and Southern Sycamore Alder Riparian Woodland all occur in the northern portion of the City. RAFSS is generally present north of Summit Avenue and east of Citrus Avenue, while California Walnut Woodland and Southern Sycamore Alder Riparian Woodland are both present in and/or at the base of the San Gabriel Mountains.

4.8 CRITICAL HABITAT

Under the federal Endangered Species Act, "Critical Habitat" is designated at the time of listing of a species or within one year of listing. "Critical Habitat" refers to habitat or a specific geographic area that contains the elements and features that are essential for the survival and recovery of the species. In the event that a project may result in take or in adverse effects to a species' designated Critical Habitat, the project proponent may be required to engage in suitable mitigation. However, consultation for impacts to Critical Habitat is only required when a project has a federal nexus (i.e. occurs on federal land, is issued federal permits [e.g. Corps Section 404 Clean Water Act permit], or receives any other federal oversight or funding). If a project does not have a federal nexus, Critical Habitat consultations are not required.

The City of Fontana falls within designated Critical Habitat for two (2) federally listed species (Exhibit 7, *Critical Habitat*). Portions of the northern part of the City, including almost the entire area north of Summit Avenue and east of I-15, as well as select other areas, are designated as SBKR Critical Habitat Unit 2: Lytle Creek/Cajon Wash (67 FR 19812 19845). Portions of the southern part of the City, particularly the areas east of Citrus Avenue and all entirely south of Jurupa Avenue, are designated as CAGN Critical Habitat Unit 10: San Bernardino and Riverside Counties (72 FR 72010 72213).

Portions of the City of Fontana also fall within the Jurupa Recovery Unit for DSF (USFWS 1997). The Recovery Units for the DSF function in much the same way as Designated Critical Habitat. These units are set up to provide biologists and planners with a means for prioritizing areas for preservation. Recovery Units are specific locations which should be preserved to protect the species and prevent extinction.



8/18/2015 JN M:\Mdata\148287\MXD\07 Critical Habitat v2.mxd

FONTANA GENERAL PLAN UPDATE
BIOLOGICAL RESOURCES SURVEY DATA

Critical Habitat

Michael Baker INTERNATIONAL

0 1 2 4 Miles

Source: San Bernardino County, USFWS Critical Habitat, Eagle Aerial 2014

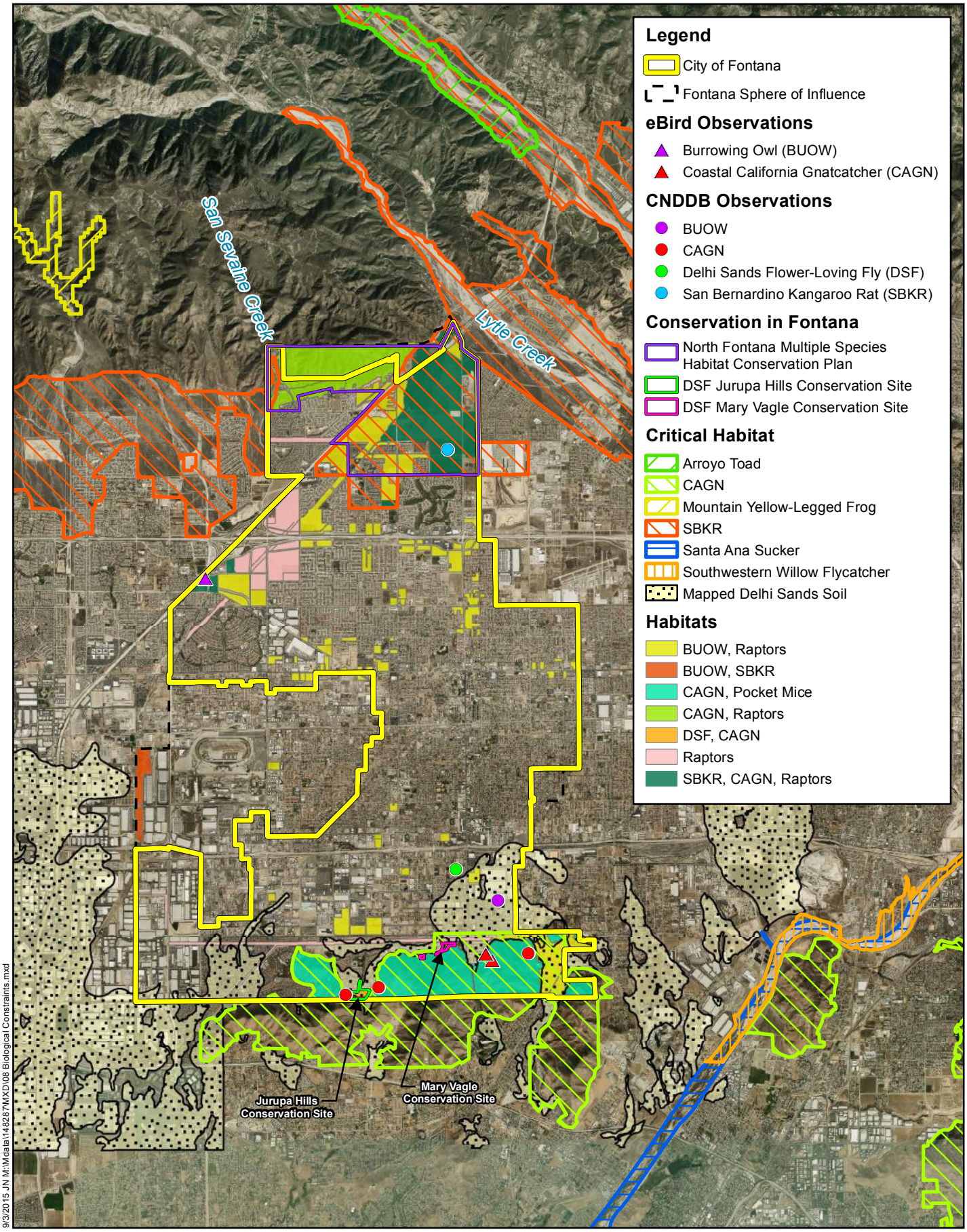
Exhibit 7

4.9 BIOLOGICAL CONSTRAINTS

Several areas within the City and its sphere of influence are identified as posing potential biological constraints to future development or usage (Exhibit 8, *Biological Constraints*). This includes the following:

- Areas that contain suitable habitat for SBKR, DSF, CAGN, and BUOW;
- Designated Critical Habitat;
- Areas with known CNDDB and/or eBird records for the above four species; and
- Areas mapped as Delhi fine sand soils.

Future development of these areas would potentially be limited due to their biological value and would require more detailed suitability assessments to determine if they still contain suitable habitat for sensitive species.



9/3/2015 JN M:\data\148287\MXD\08 Biological Constraints.mxd

FONTANA GENERAL PLAN UPDATE
HABITAT ASSESSMENT

Biological Constraints

Michael Baker INTERNATIONAL

0 1 2 4 Miles

Source: San Bernardino County, USFWS Critical Habitat, Eagle Aerial 2014

Exhibit 8

Section 5 Recommendations

5.1 FOCUSED SENSITIVE SPECIES SURVEYS

It is recommended that focused sensitive species surveys be conducted within suitable habitat prior to future site development. Targets should include SBKR in suitable RAFSS habitat in north Fontana; DSF within suitable areas of Delhi Sand soils in south Fontana, including in the DSF preserve along the northern boundary of the Jurupa Hills; CAGN along the base of the San Gabriel Mountains and in the Jurupa Hills; BUOW in the grasslands in the northern portion of the City and in the basins along Etiwanda Avenue; small mammal trapping in the RAFSS and RSS habitats, including along Etiwanda Avenue; and general sensitive plant surveys primarily in the natural habitats north of Summit Avenue and south of Jurupa Avenue. Protocol surveys for SBKR are already required in suitable habitat in north Fontana under the North Fontana Multiple Species Habitat Conservation Plan (MSHCP) (MBA 2004), and surveys for DSF and CAGN are required in suitable habitat in the Jurupa Hills in south Fontana.

Section 6 Conclusions

Development within the City of Fontana has heavily disturbed most of the naturally occurring habitats, with the only undisturbed habitat generally located at the northern and southern ends of the City at the base of the San Gabriel Mountains and in the Jurupa Hills. During vegetation mapping conducted by Michael Baker in July and August 2015, eight (8) plant communities were observed within City limits: RSS, northern mixed chaparral, RAFSS, southern sycamore alder riparian woodland, California walnut woodland, non-native grassland, vineyard, and ornamental woodland. In addition there are two (2) land cover types classified as disturbed and developed areas.

No sensitive plant species were observed within City limits during the vegetation mapping. Based on known recent distribution records, two (2) sensitive plant species are assumed to be present or to have a high likelihood of occurring within the City of Fontana: Plummer's mariposa lily and Parry's spineflower. Based on habitat requirements for specific species and the availability and quality of habitats needed by each sensitive plant species, it was determined that there is a moderate potential for three (3) sensitive plant species to occur within City limits: mesa horkelia, Robinson's pepper-grass, and short-joint beavertail. All other sensitive plant species have a low potential to occur within City limits or are presumed absent.

One (1) sensitive wildlife species was observed within City limits during the vegetation mapping: California horned lark. Based on known distribution records and/or direct observation, thirteen (13) sensitive wildlife species are known to regularly occur within the City of Fontana and are assumed to be present, including Cooper's hawk, southern California rufous-crowned sparrow, golden eagle, Bell's sparrow, BUOW, northwestern San Diego pocket mouse, northern harrier, California horned lark, loggerhead shrike, Los Angeles pocket mouse, coast horned lizard, CAGN, and DSF. Based on habitat requirements for specific species and the availability and quality of habitats needed by each sensitive wildlife species, it was determined that there is a moderate or high potential for an additional nine (9) sensitive wildlife species to occur, including silvery legless lizard, orange-throated whiptail, Swainson's hawk, red-diamond rattlesnake, western mastiff bat, San Diego black-tailed jackrabbit, San Diego desert woodrat, southern grasshopper mouse, and yellow warbler. All other sensitive wildlife species have a low potential to occur within City limits or are presumed absent.

Special attention was given to the suitability of the habitat within and adjacent to the City limits to support SBKR, DSF, CAGN, and BUOW. Suitable habitat for SBKR remains primarily in the northern portion of the city where there are still some areas of undisturbed RAFSS habitat present. However, this habitat has been cut off from all fluvial processes primarily by transportation development (especially Interstate 15 and its associated flood control facilities). Without hydrologic scouring the RAFSS habitat matures and no longer supports the open

RAFSS habitat needed by SBKR. All surveys in north Fontana since 2002 have been negative. Suitable habitat for DSF is located along the City's southern boundary in the Jurupa Hills, particularly along the southern terminus of Poplar Avenue, where a preserve consisting of the Jurupa Hills Conservation Site and the Mary Vagle Conservation Site has been set aside specifically for this species (refer to Exhibit 8). Suitable habitat for CAGN is present in both the northern and southern City limits where RSS grows in the San Gabriel Mountains and Jurupa Hills, respectively. Suitable habitat for BUOW is present in many areas in the northern City limits where extensive non-native grasslands remain, as well as along a series of flood control basins located immediately east of Etiwanda Avenue, particularly between San Bernardino Avenue and Slover Avenue.

DSF, CAGN, and BUOW are assumed to be extant within City limits based on the most recent survey data, but SBKR now has a low potential to occur. It is recommended that focused surveys be conducted for all of these species, as well as for sensitive plants in general, within suitable habitat prior to the publication of the updated General Plan. Protocol surveys for SBKR are already required in suitable habitat in north Fontana under the North Fontana MSHCP (MBA 2004), and surveys for DSF and CAGN are required within the DSF preserved habitat in south Fontana every three years or after natural or human-related habitat modification under USFWS BO FWS-SB-1788.9.

The City contains at least five (5) areas determined to be "waters of the U.S." and areas of wetlands. These areas fall under the jurisdiction of the U.S. Army Corps of Engineers. Additionally, areas of California Department of Fish and Wildlife jurisdictional riparian resources occur within the City. There are three (3) main drainage features flowing from the foothills in the northern section of the City and two (2) or three (3) small drainages in the south, which flow from the Jurupa Hills. Within the developed areas are two (2) main drainage features, which have been previously modified for flood control measures.

Section 7 References

Bartlett, R.D. and P.P. Bartlett. *Guide and Reference to the Snakes of Western North America (North of Mexico) and Hawaii*. University Press of Florida: Gainesville, FL.

Beadle, D. and J. Rising. 2002. *Sparrows of the United States: The Photographic Guide*. Princeton University Press: Princeton, NJ.

Bolster, B.C., editor. 1998. Terrestrial Mammal Species of Special Concern in California. Draft Final Report prepared by P.V. Brylski, P.W. Collins, E.D. Pierson, W.E. Rainey and T.E. Kucera. Report submitted to California Department of Fish and Game Wildlife Management Division, Nongame Bird and Mammal Conservation Program for Contract No.FG3146WM.

California Department of Fish and Wildlife (CDFW). 2010. Hierarchical List of Natural Communities with Holland Types. September 2010. Available online at http://www.dfg.ca.gov/biogeodata/vegcamp/natural_comm_list.asp

_____. 2012. Staff Report on Burrowing Owl Mitigation. State of California Natural Resources Agency.

_____. 2015. RareFind 5, California Natural Diversity Data Base, California. Data Base report on threatened, endangered, rare or otherwise sensitive species and communities.

California Native Plant Society (CNPS). 2014. Inventory of Rare and Endangered Plants of California. Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. California Native Plant Society. Sacramento, California. Available at: http://www.cnps.org/inventory.

Hickman, J.C., ed. 2012. *The Jepson Manual: Higher Plants of California*. University of California Press.

Holland, R. F. 1986. Preliminary descriptions of the Terrestrial Natural Communities of California. Calif. Dept. of Fish and Game, Sacramento, CA.

Intellicast. 2015. Historical Weather Averages for Fontana, California. Available online at http://www.intellicast.com/Local/History.aspx?location=USCA0384.

Jones, L.L.C. and R.E. Lovich, ed. 2009. *Lizards of the American Southwest*. Rio Nuevo Publishers: Tucson, AZ.

Michael Brandman Associates (MBA). 2003. City of Fontana Biological Resources Survey Data. Prepared for City of Fontana. July 2003.

_____. 2004. Draft Multiple Species Habitat Conservation Plan for North Fontana. Prepared for City of Fontana. August 2004.

Munz, P.A. 1974. *A Flora of Southern California*. University of California Press, Berkeley, California.

Reid, F.A. 2006. A Field Guide to Mammals of North America, Fourth Edition. Houghton Mifflin Company, New York, New York.

Rodewald, P. (Editor). 2015. The Birds of North America Online: http://bna.birds.cornell.edu/BNA/. Cornell Laboratory of Ornithology, Ithaca, NY.

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society Press, Sacramento, California.

Sibley, D.A. 2003. The Sibley Field Guide to Birds of Western North America. Alfred A. Knopf, Inc., New York, New York.

Stebbins, R.C. 2003. A Field Guide to Western Reptiles and Amphibians, Third Edition. Houghton Mifflin Company, New York, New York.

U.S. Department of Agriculture, Natural Resources Conservation Service, *Web Soil Survey.* (http://websoilsurvey.nrcs.usda.gov/app/)

U.S. Department of the Interior, Fish and Wildlife Service (USFWS). 1997. Delhi Sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*) Recovery Plan. U.S. Fish and Wildlife Service, Portland, OR. 51 pages.

Appendix A Site Photographs



Photograph 1: Facing southeast at a field of Riversidean alluvial fan sage scrub (RAFSS) along Sierra Avenue.



Photograph 2: Facing south. The northern flood control basins underneath the transmission lines along Etiwanda Avenue between San Bernardino Avenue and Napa Street contain isolated RAFSS habitat.



Photograph 3: Facing north at Riversidean sage scrub along the base of the San Gabriel Mountains. This area is heavily dominated by California sagebrush (*Artemisia californica*).



Photograph 4: Facing south at Riversidean sage scrub dominated by California buckwheat (*Eriogonum fasciculatum*) in the Jurupa Hills. This area has been set aside as a preserve for the federally endangered Delhi Sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*).



Photograph 5: Facing east at northern mixed chaparral along the base of the San Gabriel Mountains. This area is heavily dominated by chamise (*Adenostoma fasciculatum*).



Photograph 6: Facing north at a California walnut woodland along the base of the San Gabriel Mountains. This patch was composed almost entirely of black walnut (*Juglans californica*).



Photograph 7: Facing east at a patch of southern sycamore alder riparian woodland along the base of the San Gabriel Mountains. While many of the patches also include black walnut and various species of willow (*Salix* spp.), this patch was almost entirely dominated by sycamore.



Photograph 8: Facing east at a non-native grassland in the open spaces of North Fontana along Citrus Avenue.



Photograph 9: Facing north at a non-native grassland in urban Fontana, near the intersection of Redwood Avenue and Hilton Drive.



Photograph 10: Facing north across a field of non-native grassland. An ornamental woodland (eucalyptus [*Eucalyptus* sp.] windrow) is present at the far end of the field.



Photograph 11: Facing south toward vineyards near the intersection of Cherry and Highland Avenues. Vineyards are present along much of the area bounded by Interstate 15, San Sevaine Road, and Cherry Avenue.



Photograph 12: This lot at the northeastern corner of the intersection of Jurupa and Poplar Avenues was used primarily as a chicken farm until only recently. The facilities have all been demolished and the lot is currently vacant.

Appendix B Wildlife Species Occurring or Potentially Occurring in the City of Fontana

Table B-1: Wildlife Species Occurring or Potentially Occurring in the City of Fontana

Species		Abundance	Habitat						
Scientific Name	**Common Name**		**NNG**	**CSS**	**RAFSS**	**AGRI**	**Riparian**	**Chaparral**	**Disturbed**
INSECTA	**INSECTS**								
Anax junius	green darner	C	x			x	x		x
Libellula saturata	big red skimmer	O				x	x		
Tramea lacerata	black skimmer	O					x		
Argia sp.	damselflies	C				x	x		
Trimerotropis californica	California short-horned grasshopper	C	x	x	x	x		x	x
Gryllus sp.	field cricket	A	x	x		x			
Stenopelmatus sp.	Jerusalem cricket	C	x	x		x			
Stagmomantis californica	California praying mantis	O	x	x		x			x
Myrmeleontidae	antlions	C	x	x					
Erynnis funeralis	funereal dusky wing	A	x	x	x				
Papilio rutulus	western tiger swallowtail	C+	x			x	x		x
Anthocharis sara	sara orangetip	C	x	x	x	x			
Artogeia rapae	cabbage white	A	x	x	x	x		x	x
Zerene eurydice	California dogface	R		x	x		x		
Coenonympha californica	California ringlet	O	x	x	x				
Danaus plexippus	monarch	O	x	x	x				
Danaus gilippus	queen	O	x	x	x	x			
Euphydryas chalcedona chalcedona	Chalcedon checkerspot	O	x	x	x			x	
Charidryas gabbii	Gabb's checkerspot	O		x	x			x	
Phyciodes mylitta	mylitta crescent	O		x	x			x	
Vanessa cardui	painted lady	A	x	x	x	x	x	x	x
Vanessa atalanta	red admiral	C					x		
Junonia coenia	buckeye	C	x	x	x	x	x		x
Nymphalis antiopa	mourning cloak	C+					x		
Adelpha bredowiicalifornica	California sister	C	x				x		
Basilarchia lorquini	Lorquin's admiral	U					x		
Everes amyntula	western-tailed blue	O	x	x	x			x	
Euphilotes battoides bernardino	San Bernardino blue	C	x	x	x			x	
Icaricia acmon	acmon blue	C	x	x	x	x			
Brephidium exilis	pygmy blue	C	x	x	x	x	x	x	
Incisalia augustinus	brown elfin	O	x	x	x				
Callophrys perplexa	perplexing hairstreak	C		x	x			x	
Atlides halesus	great purple hairstreak	U	x	x	x				

Species		Abundance	Habitat						
Scientific Name	**Common Name**		**NNG**	**CSS**	**RAFSS**	**AGRI**	**Riparian**	**Chaparral**	**Disturbed**
Apodemia mormo virgulti	Behr's metalmark	C	x	x	x			x	
Rhaphiomidas terminatus abdominalis	Delhi Sands flower-loving fly	R	x	x	x				x
Apis mellifera	honey bee	A	x	x	x	x	x	x	x
Bombus sonorus	bumble bee	C	x	x	x	x	x	x	x
AMPHIBIA	**AMPHIBIANS**								
Aneides lugubris	arboreal salamander	U					x	x	
Anaxyrus boreas halophilus	California toad	C				x	x		
Batrachoseps pacificus	Pacific slender salamander	U			x		x	x	
Pseudacris cadaverina	California chorus frog	O					x		
Pseudacris hypochondriaca	Baja California chorus frog	A					x		
**Lithobates catesbeianus*	American bullfrog	O					x		
REPTILIA	**REPTILES**								
Sceloporus occidentalis longipes	Great Basin fence lizard	A+	x	x	x	x		x	x
Uta stansburiana elegans	western side-blotched lizard	A+	x	x	x			x	x
Phrynosoma blainvillii	coast horned lizard	U		x	x			x	
Aspidoscelis hyperythra beldingi	Belding's orange-throated whiptail	U		x	x				
Aspidoscelis tigris stejnegeri	coastal whiptail	O+		x	x			x	
Diadophis punctatus modestus	San Bernardino ringneck snake	U	x		x		x	x	x
Pituophis catenifer	gopher snake	C	x	x	x	x		x	x
Coluber flagellum piceus	red racer	O	x	x	x				
Lampropeltis californiae	California kingsnake	C	x	x		x		x	
Tantilla planiceps	western black-headed snake	O	x				x	x	
Hypsiglena ochrorhyncha nuchalata	California nightsnake	U	x	x	x		x	x	
Crotalus oreganus helleri	southern Pacific rattlesnake	C	x	x	x	x		x	x
AVES	**BIRDS**								
Ardea herodias	great blue heron	O	x			x	x		
Ardea alba	great egret	O	x			x	x		
Egretta thula	snowy egret	O	x			x	x		
Bubulcis ibis	cattle egret	R	x			x			
Cathartes aura	turkey vulture	C	x	x	x	x	x	x	x
Pandion haliaetus	osprey	U				x			
Circus cyaneus	northern harrier	R	x	x	x	x			
Accipiter striatus	sharp-shinned hawk	R-w		x	x		x	x	x
Accipiter cooperii	Cooper's hawk	O		x	x		x	x	x
Buteo lineatus	red-shouldered hawk	O+					x		x

Species		Abundance	Habitat						
Scientific Name	**Common Name**		**NNG**	**CSS**	**RAFSS**	**AGRI**	**Riparian**	**Chaparral**	**Disturbed**
Buteo jamaicensis	red-tailed hawk	C+	x	x	x	x	x	x	x
Buteo regalis	ferruginous hawk	O-w	x	x		x			x
Aquila chrysaetos	golden eagle	O	x	x	x	x			x
Callipepla californica	California quail	A	x	x	x		x	x	
Charadrius vociferus	killdeer	O+	x		x	x	x		
Larus californicus	California gull	A				x			x
**Columba livia*	rock dove	A+				x			x
Patagioenas fasciata	band-tailed pigeon	O	x				x	x	x
Streptopelia decaocto	Eurasian collared-dove	A+				x			x
Zenaida macroura	mourning dove	A+	x	x	x	x	x	x	x
Geococcyx californianus	greater roadrunner	O	x	x	x			x	
Tyto alba	barn owl	C	x			x	x	x	x
Megascops kennicottii	western screech-owl	C					x		
Bubo virginianus	great horned owl	C	x	x	x	x	x	x	x
Athene cunicularia	burrowing owl	U	x			x			x
Aeronautes saxatalis	white-throated swift	C	x	x	x	x	x	x	
Archilochus alexandri	black-chinned hummingbird	O					x		
Calypte anna	Anna's hummingbird	A+	x	x	x	x		x	x
Calypte costae	Costa's hummingbird	A+	x	x	x			x	
Melanerpes formicivorus	acorn woodpecker	C					x	x	
Picoides nuttallii	Nuttall's woodpecker	U+					x	x	x
Picoides pubescens	downy woodpecker	U					x		x
Colaptes auratus	northern flicker	C		x	x		x	x	x
Falco sparverius	American kestrel	A+	x	x	x	x	x	x	x
Falco columbarius	merlin	R-w	x	x	x				
Falco peregrinus	peregrine falcon	U	x	x		x			x
Falco mexicanus	prairie falcon	U	x			x	x		
Sayornis nigricans	black phoebe	A+	x				x		x
Sayornis saya	Say's phoebe	C+	x	x	x	x		x	x
Myiarchus cinerascens	ash-throated flycatcher	O-b+	x	x	x	x	x	x	x
Tyrannus vociferans	Cassin's kingbird	O+	x	x	x			x	x
Tyrannus verticalis	western kingbird	C-b+	x	x	x	x			x
Vireo huttoni	Hutton's vireo	U					x		
Aphelocoma californica	western scrub-jay	A	x	x	x			x	x
Corvus brachyrhynchos	American crow	A+	x	x	x	x	x	x	x
Corvus corax	common raven	A	x	x	x	x	x	x	x
Eremophila alpestris actia	California horned lark	O+	x			x			x

Species		Abundance	Habitat						
Scientific Name	**Common Name**		**NNG**	**CSS**	**RAFSS**	**AGRI**	**Riparian**	**Chaparral**	**Disturbed**
Tachycineta thalassina	violet-green swallow	O-b	x	x	x	x	x		
Stelgidopteryx serripenis	northern rough-winged swallow	O-b	x	x	x	x	x	x	
Hirundo rustica	barn swallow	C-b+	x	x	x	x	x		x
Psaltriparus minimus	bushtit	A+		x	x			x	x
Thryomanes bewickii	Bewick's wren	A+		x	x			x	
Troglodytes aedon	house wren	O					x		
Regulus calendula	ruby-crowned kinglet	O-w					x	x	
Polioptila caerulea	blue-gray gnatcatcher	O		x	x		x	x	
Polioptila californica californica	coastal California gnatcatcher	R		x	x		x		
Chamaea fasciata	wrentit	A		x	x			x	
Sialia mexicana	western bluebird	O	x			x			x
Mimus polyglottos	northern mockingbird	A+	x	x	x	x	x		x
Toxostoma redivivum	California thrasher	C		x	x			x	
**Sturnus vulgaris*	European starling	A+	x			x			x
Bombycilla cedrorum	cedar waxwing	O-w		x	x		x	x	
Phainopepla nitens	phainopepla	C		x	x			x	
Lanius ludovicianus	loggerhead shrike	O	x	x	x	x			x
Setophaga coronata auduboni	Audubon's yellow-rumped warbler	A-w		x	x		x	x	x
Geothlypis trichas	common yellowthroat	U					x		
Melozone crissalis	California towhee	A+	x	x	x			x	x
Pipilo maculatus	spotted towhee	A+	x	x	x			x	
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	O	x	x	X				
Spizella passerina	chipping sparrow	O-w	x	x	x				
Chondestes grammacus	lark sparrow	O	x	x	x			x	x
Artemisiospiza belli	Bell's sparrow	U		x	x				
Melospiza melodia	song sparrow	C	x	x	x		x	x	x
Junco hyemalis	dark-eyed junco	O-w	x	x	x		x	x	
Agelaius phoeniceus	red-winged blackbird	O				x	x		
Sturnella neglecta	western meadowlark	C	x	x	x	x			x
Euphagus cyanocephalus	Brewer's blackbird	C				x			x
Icterus cucullatus	hooded oriole	O-b+	x				x		x
Haemorhous mexicanus	house finch	A+	x	x	x			x	x
Spinus psaltria	lesser goldfinch	C+	x	x	X				
Spinus tristis	American goldfinch	C	x	x	x				
**Passer domesticus*	house sparrow	A+	x			x			x
MAMMALIA	**MAMMALS**								

Species		Abundance	Habitat						
Scientific Name	**Common Name**		**NNG**	**CSS**	**RAFSS**	**AGRI**	**Riparian**	**Chaparral**	**Disturbed**
**Didelphis virginiana*	Virginia opossum	A				x	x	x	x
Scapanus latimanus	broad-footed mole	A	x			x			x
Myotis californicus	California myotis	C		x	x		x	x	x
Myotis lucifugus	little brown myotis	O		x	x		x	x	x
Lasiurus cinereus	hoary bat	U					x	x	
Lepus californicus bennettii	San Diego black-tailed jackrabbit	O	x	x	x				
Sylvilagus audubonii	desert cottontail	A+	x	x	x	x		x	x
Otospermophilus beecheyi	California ground squirrel	A+	x			x			x
Thomomys bottae	Botta's pocket gopher	A	x	x	x	x		x	x
Chaetodipus fallax	San Diego pocket mouse	O		x	x				
Dipodomys merriami parvus	San Bernardino kangaroo rat	R			x				
Peromyscus californicus	California mouse	C	x	x	x	x	x	x	x
Reithrodontomys megalotis	western harvest mouse	O	x	x	x				
Peromyscus maniculatus	deer mouse	A	x	x	x	x	x	x	x
Peromyscus truei	pinon mouse	O			x		x	x	
Neotoma fuscipes	dusky-footed woodrat	C	x	x	x			x	
Neotoma lepida intermedia	San Diego desert woodrat	U		x	x				
**Rattus norvegicus*	Norway rat	C				x			x
Microtus californicus	California vole	O	x			x			
Canis latrans	coyote	C+	x	x	x	x	x	x	x
Urocyon cinereoargenteus	gray fox	U		x	x		x	x	
Procyon lotor	raccoon	O	x	x	x	x	x	x	x
Mustela frenata	long-tailed weasel	U	x	x	x	x		x	X
Mephitis mephitis	Striped skunk	C	x	x	x	x	x	x	x
Felis concolor	mountain lion	R	x	x	x	x	x	x	x
Lynx rufus	bobcat	U	x	x	x		x	x	
Odocoileus hemionus	mule deer	O	x	x	x	x	x	x	x

Abundance
R- Rare
U- Uncommon
O- Occasional
C- Common
A- Abundant
w- wintering only (birds)
b- breeding only (birds)
*- non-native
+- detected during vegetation mapping

Habitat
NNG- Non-native grassland
CSS- Coastal sage scrub
RAFSS- Riversidean alluvial fan sage scrub
AGRI- Agricultural, vineyards, and livestock facilities
Riparian- Sycamore-alder riparian woodland, willow scrub, and walnut woodland
Disturbed- Backyards, windrows, golf courses, and other developed areas

Appendix C Potentially Occurring Sensitive Biological Resources

Table C-1: Potentially Occurring Sensitive Biological Resources

Scientific Name Common Name	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
WILDLIFE SPECIES				
Accipiter cooperii Cooper's hawk	Fed: None CA: WL	Generally found in forested areas up to 3,000 feet in elevation, especially near edges and rivers. Prefers hardwood stands and mature forests, but can be found in urban and suburban areas where there are tall trees for nesting. Common in open areas during nesting season.	No	**Present**. This species is known to occur within City limits.
Agelaius tricolor tricolored blackbird	Fed: None CA: CSC	Range is limited to the coastal areas of the Pacific coast of North America, from Northern California to upper Baja California. Can be found in a wide variety of habitat including annual grasslands, wet and dry vernal pools and other seasonal wetlands, agricultural fields, cattle feedlots, and dairies. Occasionally forage in riparian scrub habitats along marsh borders. Basic habitat requirements for breeding include open accessible water, protected nesting substrate (freshwater marsh dominated by cattails, willows, and bulrushes [*Schoenoplectus* sp.]), and either flooded or thorny or spiny vegetation and suitable foraging space providing adequate insect prey.	No	**Low**. This species has occurred in the past at wastewater treatment plants in adjacent areas but there is little if any habitat within City limits.
Aimophila ruficeps canescens southern California rufous-crowned sparrow	Fed: None CA: WL	Typically found between 3,000 and 6,000 feet in elevation. Breed in sparsely vegetated shrublands on hillsides and canyons. Prefers coastal sage scrub dominated by California sagebrush (*Artemisia californica*), but can also be found breeding in coastal bluff scrub, low-growing serpentine chaparral, and along the edges of tall chaparral habitats.	No	**Present**. This species is known to occur within City limits.
Anniella pulchra pulchra silvery legless lizard	Fed: None CA: CSC	Occurs primarily in areas with sandy or loose loamy soils under sparse vegetation of beaches, chaparral, or pine-oak woodland; or near sycamores, oaks, or cottonwoods that grow on stream terraces. Often found under or in the close vicinity of logs, rocks, old boards, and the compacted debris of woodrat nests.	No	**Moderate**. This species may occur along drainages leaving the San Gabriel Mountains in the northern City limits.
Aquila chrysaetos golden eagle	Fed: None CA: **FP**;WL	Occupies nearly all terrestrial habitats of the western states except densely forested areas. Favors secluded cliffs with overhanging ledges and large trees for nesting and cover. Hilly or mountainous country where takeoff and soaring are supported by updrafts is generally preferred to flat habitats. Deeply cut canyons rising to open mountain slopes and crags are ideal habitat.	No	**Present**. This species is known to occur within City limits.
Artemisiospiza belli belli Bell's sage sparrow	Fed: None CA: WL	Occurs in chaparral dominated by fairly dense stands of chamise. Also found in coastal sage scrub in south of range.	No	**Present**. This species is known to occur within City limits.

Scientific Name Common Name	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Aspidoscelis hyperythra orange-throated whiptail	Fed: None CA: CSC	Inhabits low-elevations coastal scrub, chamise-redshank chaparral, mixed chaparral, and valley-foothill hardwood habitats. Semi-arid brushy areas typically with loose soil and rocks, including washes, streamsides, rocky hillsides, and coastal chaparral.	No	**Moderate**. There is suitable habitat for this species at the base of the San Gabriel Mountains and Jurupa Hills.
Athene cunicularia burrowing owl	Fed: None CA: CSC	Primarily a grassland species, but it persists and even thrives in some landscapes highly altered by human activity. Occurs in open, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. The overriding characteristics of suitable habitat appear to be burrows for roosting and nesting and relatively short vegetation with only sparse shrubs and taller vegetation.	No	**Present**. This species is known to occur within City limits.
Batrachoseps gabrieli San Gabriel slender salamander	Fed: None CA: None	Occurs only in the San Gabriel Mountains. Often found under rocks, wood, fern fronds, and on soil at the base of talus slopes. Most active on the surface in winter and early spring.	No	**Presumed absent**. The City is outside of this species' range.
Buteo swainsoni Swainson's hawk	Fed: None CA: **THR**	Typical habitat is open desert, grassland, or cropland containing scattered, large trees or small groves. Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley. Forages in adjacent grassland or suitable grain or alfalfa fields or livestock pastures.	No	**High**. This species has occurred within the City and in areas adjacent to it in recent years. Occurs only as a transitory migrant.
Catostomus santaanae Santa Ana sucker	Fed: **THR** CA: CSC	Occur in the watersheds draining the San Gabriel and San Bernardino Mountains of southern California. Steams that Santa Ana Sucker inhabit are generally perennial streams with water ranging in depth from a few inches to several feet and with currents ranging from slight to swift.	No	**Presumed absent**. There is no suitable habitat within City limits.
Chaetodipus fallax fallax northwestern San Diego pocket mouse	Fed: None CA: CSC	Occurs in desert and coastal habitats in southern California, Mexico, and northern Baja California, from sea level to at least 1,400 meters above msl. Found in a variety of temperate habitats ranging from chaparral and grasslands to scrub forests and deserts. Requires low growing vegetation or rocky outcroppings, as well as sandy soils for burrowing.	No	**Present**. This species is known to occur within City limits.
Chaetodipus fallax pallidus pallid San Diego pocket mouse	Fed: None CA: CSC	Common resident of sandy herbaceous areas, usually in association with rocks or course gravel in southwestern California. Occurs mainly in arid coastal and desert border areas. Habitats include coastal scrub, chamise-redshank chaparral, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon-juniper, and annual grassland.	No	**Low**. There is little if any suitable habitat for this species within City limits.

Scientific Name Common Name	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Circus cyaneus northern harrier	Fed: None CA: CSC	Forages and nests in coastal saltwater and freshwater marshes and grasslands.	No	**Present**. This species is known to occur within City limits.
Crotalus ruber red-diamond rattlesnake	Fed: None CA: CSC	It can be found from the desert, through dense chaparral in the foothills (it avoids the mountains above around 4,000 feet), to warm inland mesas and valleys, all the way to the cool ocean shore. It is most commonly associated with heavy brush with large rocks or boulders. Dense chaparral in the foothills, cactus or boulder associated coastal sage scrub, oak and pine woodlands, and desert slope scrub associations are known to carry populations of the northern red-diamond rattlesnake; however, chamise and red shank associations may offer better structural habitat for refuges and food resources for this species than other habitats.	No	**Moderate**. There is suitable habitat for this species in the northern and southern portions of the City.
Dipodomys merriami parvus San Bernardino kangaroo rat	Fed: **END** CA: CSC	Primarily found in Riversidian alluvial fan sage scrub and sandy loam soils, alluvial fans and flood plains, and along washes with nearby sage scrub. May occur at lower densities in Riversidian upland sage scrub, chaparral and grassland in uplands and tributaries in proximity to Riversidian alluvial fan sage scrub habitats. Tend to avoid rocky substrates and prefer sandy loam substrates for digging of shallow burrows.	No	**Present**. This species is known to occur within City limits.
Empidonax traillii extimus southwestern willow flycatcher	Fed: **END** CA: **END**	Occurs in riparian woodlands in southern California. Typically requires large areas of willow thickets in broad valleys, canyon bottoms, or around ponds and lakes. These areas typically have standing or running water, or are at least moist.	No	**Low**. There is little if any suitable habitat for this species within City limits.
Eremophila alpestris actia California horned lark	Fed: None CA: WL	Common to abundant resident in a variety of open habitats, usually where trees and large shrubs are absent. Breed in level or gently sloping shortgrass prairie, montane meadows, "bald" hills, open coastal plains, fallow grain fields, and alkali flats. In non-agricultural lands, it typically inhabits areas of short vegetation or bare ground, including shortgrass prairie, deserts, brushy flats, and alpine habitat. Within southern California, California horned larks breed primarily in open fields, (short) grasslands, and rangelands. Grasses, shrubs, forbs, rocks, litter, clods of soil, and other surface irregularities provide cover.	Yes	**Present**. This species was observed during the City-wide survey.

Scientific Name Common Name	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Eumops perotis californicus western mastiff bat	Fed: None CA: CSC	Primarily a cliff-dwelling species, roost generally under exfoliating rock slabs. Roosts are generally high above the ground, usually allowing a clear vertical drop of at least three meters below the entrance for flight. In California, it is most frequently encountered in broad open areas. Its foraging habitat includes dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas.	No	**Moderate**. There is suitable habitat for this species particularly in the northern portions of the City.
Gila orcuttii arroyo chub	Fed: None CA: CSC	Warm streams of the Los Angeles Plain, which are typically muddy torrents during the winter, and clear quiet brooks in the summer, possibly drying up in places. They are found both in slow-moving and fast-moving sections, but generally deeper than 40 cm.	No	**Presumed absent**. There is no suitable habitat within City limits.
***Lampropeltis zonata* (*parvirubra*)** California mountain kingsnake (San Bernardino population)	Fed: None CA: CSC	Found in diverse habitats including coniferous forest, oak-pine woodlands, riparian woodland, chaparral, Manzanita, and coastal sage scrub. Wooded areas near a stream with rock outcrops, talus or rotting logs that are exposed to the sun.	No	**Low**. There is little if any suitable habitat for this species within City limits.
Lanius ludovicianus loggerhead shrike	Fed: None CA: CSC	Often found in broken woodlands, shrublands, and other habitats. Prefers open country with scattered perches for hunting and fairly dense brush for nesting.	No	**Present**. This species is known to occur within City limits.
Lasiurus xanthinus western yellow bat	Fed: None CA: CSC	Roosts in palm trees in foothill riparian, desert wash, and palm oasis habitats with access to water for foraging.	No	**Moderate**. This species has been recorded in the City in the past. Limited habitat remains.
Lepus californicus bennettii San Diego black-tailed jackrabbit	Fed: None CA: CSC	Occurs in diverse habitats, but primarily is found in arid regions supporting shortgrass habitats. Openness of open scrub habitat is preferred over dense chaparral.	No	**High**. There is suitable habitat for this species in areas of sage scrub throughout the City.
Neotoma lepida intermedia San Diego desert woodrat	Fed: None CA: CSC	Occurs in coastal scrub communities between San Luis Obispo and San Diego Counties. Prefers moderate to dense canopies, and especially rocky outcrops.	No	**Moderate**. There is suitable habitat for this species throughout the northern and southern portions of the City.
Nyctinomops femorosaccus pocketed free-tailed bat	Fed: None CA: CSC	Often found in pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis.	No	**Low**. There is little if any suitable habitat for this species within City limits.

Scientific Name Common Name	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Onychomys torridus ramona southern grasshopper mouse	Fed: None CA: CSC	Ranges southward from Los Angeles County to the Mexican border, generally west of the desert. Inhabits mesas and valleys along the Pacific slope of the Peninsular and Transverse Ranges in southwestern California and extreme northwestern Baja California, Mexico.	No	**Moderate**. There is suitable habitat for this species in the northern limits of the City.
Ovis canadensis nelsoni Nelson's bighorn sheep	Fed: None CA: None	Require a variety of habitat characteristics related to topography, visibility, forage quality and quantity, and water availability (USFWS 2000). Prefer areas on or near mountainous terrain that are visually open, as well as steep and rocky. Alluvial fans and washed in flatter terrain is also used for foraging, water, and connectivity between mountainous areas. Tend to avoid dense vegetation and higher elevations that support chaparral.	No	**Presumed absent**. There is no suitable habitat for this species within City limits.
Perognathus longimembris brevinasus Los Angeles pocket mouse	Fed: None CA: CSC	Occurs in lower elevation grasslands and coastal sage scrub communities in and around the Los Angeles Basin. Prefers open ground with fine sandy soils. May not dig extensive burrows, but instead will seek refuge under weeds and dead leaves instead.	No	**Present**. This species is known to occur within City limits.
Phrynosoma blainvillii coast horned lizard	Fed: None CA: CSC	Occurs in a wide variety of vegetation types including coastal sage scrub, annual grassland, chaparral, oak woodland, riparian woodland and coniferous forest. In inland areas, this species is restricted to areas with pockets of open microhabitat, created by disturbance (i.e. fire, floods, roads, grazing, fire breaks). The key elements of such habitats are loose, fine soils with a high sand fraction; an abundance of native ants or other insects; and open areas with limited overstory for basking and low, but relatively dense shrubs for refuge.	No	**Present**. This species is known to occur within City limits.
Polioptila californica californica coastal California gnatcatcher	Fed: **THR** CA: CSC	Obligate resident of sage scrub habitats that are dominated by California sagebrush. This species generally occurs below 750 feet elevation in coastal regions and below 1,500 feet inland. It prefers habitat with more low-growing vegetation.	No	**Present**. This species is known to occur within City limits.
Rana muscosa Sierra Madre yellow-legged frog	Fed: **END** CA: **END**	Occurs in lower elevation habitats characterized by rocky streambeds and wet meadows, while higher elevation habitats include lakes, ponds, and streams. Occupy streams in narrow, rock-walled canyons.	No	**Presumed absent**. There is no suitable habitat for this species within City limits.
Rhaphiomidas terminatus abdominalis Delhi Sands flower-loving fly	Fed: **END** CA: None	DSF habitat is limited to areas that include Delhi fine sand, an aeolian (wind-deposited) soil type. The highest density of DSF have been found in habitat that includes a variety of plants including California buckwheat, California croton, deerweed, and telegraph weed.	No	**Present**. This species is known to occur within City limits.

Scientific Name Common Name	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Rhinichthys osculus ssp. 3 Santa Ana speckled dace	Fed: None CA: CSC	Requires permanent flowing streams within summer water temperatures of 17 – 20 degrees Celsius. Inhabits shallow cobble and gravel riffles and small streams that flow through steep, rocky canyons with chaparral covered walls.	No	**Presumed absent**. There is no suitable habitat for this species within City limits.
Setophaga petechia yellow warbler	Fed: None CA: CSC	Nests over all of California except the Central Valley, the Mojave Desert region, and high altitudes and the eastern side of the Sierra Nevada. Winters along the Colorado River and in parts of Imperial and Riverside Counties. Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders or in mature chaparral. May also use oaks, conifers, and urban areas near stream courses.	No	**Moderate**. There is suitable habitat for this species in select spots within the City, particularly in the drainages in its northern limits.
Taxidea taxus American badger	Fed: None CA: CSC	Primarily occupy grasslands, parklands, farms, tallgrass and shortgrass prairies, meadows, shrub-steppe communities and other treeless areas with sandy loam soils where it can dig more easily for its prey. Occasionally found in open chaparral (with less than 50% plant cover) and riparian zones.	No	**Low**. There is little if any suitable habitat for this species within City limits.
Thamnophis hammondii two-striped garter snake	Fed: None CA: CSC	Occurs in or near permanent fresh water, often along streams with rocky beds and riparian growth up to 7,000 feet in elevation.	No	**Low**. There is little if any suitable habitat for this species within City limits.
Vireo bellii pusillus least Bell's vireo	Fed: **END** CA: **END**	Primarily occupy Riverine riparian habitat that typically feature dense cover within 1 -2 meters of the ground and a dense, stratified canopy. Typically it is associated with southern willow scrub, cottonwood-willow forest, mule fat scrub, sycamore alluvial woodlands, coast live oak riparian forest, arroyo willow riparian forest, or mesquite in desert localities. It uses habitat which is limited to the immediate vicinity of water courses, 2,000 feet elevation in the interior.	No	**Low**. There is little if any suitable habitat for this species within City limits.
PLANT SPECIES				
Abronia villosa var. aurita chaparral sand-verbena	Fed: None CA: None CNPS: 1B.1	Grows in sandy soils in coastal sage scrub and in chaparral habitats. Found at elevations ranging from 262 to 5,249 feet. Blooming period ranges from January to September.	No	**Low**. There is marginal habitat for this species in the northern limits of the City.
Ambrosia monogyra singlewhorl burrobrush	Fed: None CA: None CNPS: 2B.2	Found in sandy soils in chaparral and Sonoran desert scrub. Found at elevations ranging from 3 to 1,640 feet. Blooming period ranges from August to November.	No	**Low**. There is marginal habitat for this species in the northern limits of the City.
Arctostaphylos glandulosa ssp. gabrielensis San Gabriel manzanita	Fed: None CA: None CNPS: 1B.2	Grows on rocky outcrops in chaparral. Found at approximately 4,921 feet in elevation. Blooming period is in March.	No	**Presumed absent**. The City is well outside of the known elevation range for this species.

Scientific Name Common Name	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Arenaria paludicola marsh sandwort	Fed: **END** CA: **END** CNPS: 1B.1	Grows mainly in wetlands and freshwater marshes in arid climates. The plant can grow in saturated acidic bog soils and soils that are sandy with a high organic content. Found at elevations ranging from 33 to 558 feet. Blooming period is from May to August.	No	**Presumed absent**. The City is well outside of the known elevation range for this species.
Calochortus plummerae Plummer's mariposa-lily	Fed: None CA: None CNPS: 4.2	Prefers openings in chaparral, foothill woodland, coastal sage scrub, valley foothill grasslands, cismontane woodland, lower montane coniferous forest and yellow pine forest. Often found on dry, rocky slopes and soils and brushy areas. Can be very common after a fire. Found at elevations ranging from 459 to 6,299 feet. Blooming period is from May to July.	No	**Present**. This species has been recorded within and in areas immediately adjacent to City limits.
Centromadia pungens ssp. laevis smooth tarplant	Fed: None CA: None CNPS: 1B.1	Occurs in alkaline soils within chenopod scrub, meadows and seeps, playas, riparian woodland, and valley and foothill grassland habitats. Often found in disturbed, moist areas. Grows in elevation ranging from 0 to 2,100 feet. Blooming period ranges from April to September.	No	**Low**. There is marginal habitat for this species within the City limits.
Chloropyron maritimum ssp. maritimum salt marsh bird's-beak	Fed: **END** CA: **END** CNPS: 1B.2	Upper terraces and higher edges of coastal salt marshes where tidal inundation is periodic. Found at elevations ranging from 0 to 99 feet. Blooming period is from May to October.	No	**Presumed absent**. The City is well outside of the known elevation range for this species.
Chorizanthe parryi var. parryi Parry's spineflower	Fed: None CA: None CNPS: 1B.2	Occurs on sandy and/or rocky soils in chaparral, coastal sage scrub, and sandy openings within alluvial washes and margins. Found at elevations ranging from 951 to 3,773 feet. Blooming period is from April to June.	No	**Present**. This species has been recorded within and in areas adjacent to City limits.
Chorizanthe xanti var. leucotheca white-bracted spineflower	Fed: None CA: None CNPS: 1B.2	Grows in Mojavean desert scrub, pinyon-juniper woodland, and on alluvial fans in coastal scrub. Found at elevations ranging from 984 to 3,937 feet. Blooming period is from April to June.	No	**Low**. While alluvial fan sage scrub is present in the northern City limits, it is cut off from natural flow patterns by surrounding development.
Cladium californicum California saw-grass	Fed: None CA: None CNPS: 2B.2	Found in meadows and seeps. Also in alkaline or freshwater marshes and swamps. Found at elevations ranging from 197 to 2,838 feet. Blooming period is from June to September.	No	**Presumed absent**. There is no suitable habitat within the City limits.
Claytonia lanceolata var. peirsonii Peirson's spring beauty	Fed: None CA: None CNPS: 3.1	Grows in upper montane coniferous forest and subalpine coniferous forest, usually on northern aspects in granitic scree slopes. Often found in areas with sandy or file soil components and granitic cobbles. Found at elevations ranging from 7,005 to 9,006 feet. Blooming period is from May to June.	No	**Presumed absent**. The City is well outside of the known elevation range for this species.

Scientific Name Common Name	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Dodecahema leptoceras slender-horned spineflower	Fed: **END** CA: **END** CNPS: 1B.1	Chaparral, coastal scrub (alluvial fan sage scrub). Flood deposited terraces and washes. Found at elevations ranging from 1,181 to 2,690 feet. Blooming period is from April to June.	No	**Low**. While alluvial fan sage scrub is present in the northern City limits, it is cut off from natural flow patterns by surrounding development.
Dudleya multicaulis many-stemmed dudleya	Fed: None CA: None CNPS: 1B.2	Found in chaparral, coastal scrub, and valley and foothill grasslands in heavy, often clayey soils or grassy slopes. Found at elevations ranging from 49 to 2,592 feet. Blooming period is from April to July.	No	**Low**. There is marginal habitat for this species in the northern limits of the City.
Eriastrum densifolium ssp. sanctorum Santa Ana River woollystar	Fed: **END** CA: **END** CNPS: 1B.1	Grows in sandy or gravelly soils within chaparral and coastal scrub habitat. Found at elevations ranging from 299 to 2,001 feet. Blooming period is from April to September.	No	**Presumed absent**. This species is not known to occur within City limits.
Eriogonum microthecum var. johnstonii Johnston's buckwheat	Fed: None CA: None CNPS: 1B.3	Grows in subalpine coniferous forest and upper montane coniferous forest on slopes and ridges on granite or limestone surfaces. Found at elevations ranging from 6,001 to 9,600 feet. Blooming period is from July to September.	No	**Presumed absent**. The City is well outside of the known elevation range for this species.
Horkelia cuneata var. puberula mesa horkelia	Fed: None CA: None CNPS: 1B.1	Occurs on sandy or gravelly soils in chaparral, woodlands, and coastal scrub plant communities. Found at elevations ranging from 230 to 2,657 feet. Blooming period is from February to September.	No	**Moderate**. There is suitable habitat in the northern and southern City limits. There is a historic (1904) record of this species within City limits in the Jurupa Hills, but it is believed to be possibly extirpated.
Lepidium virginicum var. robinsonii Robinson's pepper-grass	Fed: None CA: None CNPS: 4.3	Dry soils on chaparral and coastal sage scrub. Found at elevations ranging from 3 to 2,904 feet. Blooming period is from January to July.	No	**Moderate**. There is suitable habitat in the northern and southern City limits.
Lilium parryi lemon lily	Fed: None CA: None CNPS: 1B.2	Occurs in lower montane coniferous forest, meadows and seeps, riparian forest, and upper montane coniferous forest. Generally occurs in wet, mountainous terrain; forested areas; on the shady edges of streams; or in open, boggy meadows and seeps. Grows at elevations ranging from 4,003 to 9,006 feet. Blooming period is from July to August.	No	**Presumed absent**. The City is well outside of the known elevation range for this species.
Linanthus concinnus San Gabriel linanthus	Fed: None CA: None CNPS: 1B.2	Grows in lower montane coniferous forest and upper montane coniferous forest on dry, rocky slopes. Often associated with Jeffrey pine/canyon oak forests. Grows at elevations ranging from 5,167 to 8,350 feet. Blooming period is from April to July.	No	**Presumed absent**. The City is well outside of the known elevation range for this species.

Scientific Name Common Name	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Lycium parishii Parish's desert-thorn	Fed: None CA: None CNPS: 2B.3	Habitats include coastal scrub and Sonoran desert scrub. Found at elevations ranging from 443 to 3,281 feet. Blooming period is from March to April.	No	**Presumed absent**. While there is suitable habitat, this species is believed to be extirpated from the entire County of San Bernardino.
Monardella australis ssp. jokerstii Jokerst's monardella	Fed: None CA: None CNPS: 1B.1	Grows in lower montane coniferous forest and chaparral on steep scree or talus slopes between breccia. Usually found on secondary alluvial benches along drainages and washes. Found at elevations ranging from 4,429 to 5,741 feet. Blooming period is from July to September.	No	**Presumed absent**. The City is well outside of the known elevation range for this species.
Monardella pringlei Pringle's monardella	Fed: None CA: None CNPS: 1A	Prefers sandy soils within coastal scrub habitat. Found at elevations ranging from 984 to 1,312 feet. Blooming period is from May to June.	No	**Low**. There is marginal habitat in the northern and southern City limits. A historic (1904) record of this species is just south of the City limits, but was not observed in a 1979 survey (conducted outside the appropriate blooming season).
Muhlenbergia californica California muhly	Fed: None CA: None CNPS: 4.3	Found in chaparral, coastal scrub, lower montane coniferous forest, meadows and seeps. Can be found along stream banks within these habitats. Found at elevations ranging from 328 to 6,562 feet. Blooming period is from June to September.	No	**Presumed absent**. There is no suitable habitat within the City limits.
Navarretia prostrata prostrate vernal pool navarretia	Fed: None CA: None CNPS: 1B.1	Grows in coastal scrub, meadows and seeps, vernal pools, valley and foothill grassland habitats. Found at elevations ranging from 10 to 3,970 feet. Blooming period is from April to June.	No	**Presumed absent**. There is no suitable habitat within the City limits.
Opuntia basilaris var. brachyclada short-joint beavertail	Fed: None CA: None CNPS: 1B.2	Occurs in chaparral, Joshua tree woodland, Mojavean desert scrub, and pinyon-juniper woodland in sandy soils or in coarse, granitic loam. Found at elevations ranging from 1,394 to 5,906 feet. Blooming period is from April to August.	No	**Moderate**. There is suitable habitat for this species in the mountains in the northern City limits.
Oreonana vestita woolly mountain-parsley	Fed: None CA: None CNPS: 1B.3	Grows in subalpine coniferous forest and upper montane coniferous forest on high ridges underlain by scree, talus, or gravel. Found at elevations ranging from 7,907 to 11,483 feet. Blooming period is from March to September.	No	**Presumed absent**. The City is well outside of the known elevation range for this species.
Phacelia stellaris Brand's star phacelia	Fed: None CA: None CNPS: 1B.1	Found in coastal dune and coastal scrub habitats. Found at elevations ranging from 3 to 1,312 feet. Blooming period is from March to June.	No	**Low**. There is marginal habitat for this species within City limits.

Scientific Name Common Name	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Sagittaria sanfordii Sanford's arrowhead	Fed: None CA: None CNPS: 1B.2	Found in standing or slow-moving freshwater ponds, marshes, and ditches. Found at elevations ranging from 0 to 2,133 feet. Blooming period is from May to November.	No	**Presumed absent**. There is no suitable habitat within the City limits.
Senecio aphanactis chaparral ragwort	Fed: None CA: None CNPS: 2B.2	Grows in chaparral, cismontane woodland, and coastal scrub habitat. Found at elevations ranging from 49 to 2,625 feet. Blooming period is from January to April.	No	**Low**. There is a historic (1909) record of this species immediately south of City limits in the Jurupa Hills in Riverside County. It is not known to occur in San Bernardino County.
Sphenopholis obtusata prairie wedge grass	Fed: None CA: None CNPS: 2B.2	Prefers cismontane woodland, meadows and seeps. Found at elevations ranging from 984 to 6,562 feet. Blooming period is from April to July.	No	**Presumed absent**. There is no suitable habitat within the City limits.
Streptanthus bernardinus Laguna Mountains jewelflower	Fed: None CA: None CNPS: 4.3	Grows in chaparral and lower montane coniferous forest on clay or decomposed granite soils. It is sometimes found in disturbed areas such as streamsides or roadcuts. Found at elevations ranging from 4,724 to 8,202 feet. Blooming period is from May to August.	No	**Presumed absent**. The City is well outside of the known elevation range for this species.
Symphyotrichum defoliatum San Bernardino aster	Fed: None CA: None CNPS: 1B.2	Grows in cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, and vernally mesic valley and foothill grassland. Can be found growing near ditches, streams, and springs within these habitats. Found at elevations ranging from 7 to 6,693 feet. Blooming period is from July to November.	No	**Presumed absent**. There is no suitable habitat within the City limits.
Viola pinetorum var. grisea grey-leaved violet	Fed: None CA: None CNPS: 1B.3	Occurs in subalpine coniferous forest, upper montane coniferous forest, and meadows and seeps on dry mountain peaks and slopes. Found at elevations ranging from 4,921 to 11,155 feet. Blooming period is from April to July.	No	**Presumed absent**. The City is well outside of the known elevation range for this species.
SENSITIVE HABITATS				
California Walnut Woodland	CDFW Sensitive Habitat	Occurs on valley slopes and in valley bottoms, as well as around rocky outcrops, on the south side of the San Gabriel Mountains to the Santa Ana Mountains. This habitat usually occurs in areas with relatively moist, fine soils. It can intergrade with coast live oak woodland and coast live oak forest in more mesic areas, and in drier areas it is typically in proximity to Venturan or Riversidean sage scrub. The canopy is relatively open and is dominated by California walnut (*Juglans californica*) with a grassy understory typically consisting of introduced winter annuals. Similar to Walnut Forest but with a more open canopy.	Yes	**Present**.

Scientific Name Common Name	**Status**	**Habitat**	**Observed During Survey**	**Potential to Occur**
Coastal and Valley Freshwater Marsh	CDFW Sensitive Habitat	Typified by areas permanently flooded by freshwater with lack of any significant current. Generally dominated by perennial emergent up to 4-5 meters tall, particularly cattails (*Typha* spp.) and bulrushes (*Bolboschoenus* spp. and *Schoenoplectus* spp.), often forming completely closed canopies. Prolonged saturation leads to deep, peaty soils.	No	**Absent.**
Riversidian Alluvial Fan Sage Scrub	CDFW Sensitive Habitat	Occur within broad washes of sandy alluvial drainages that carry rainfall runoff sporadically in winter and spring, but remain relatively dry through the remainder of the year. Is restricted to drainages and floodplains with very sandy substrates that have a dearth of decomposed plant material. These areas do not develop into riparian woodland or scrub due to the limited water resources and scouring by occasional floods.	Yes	**Present**.
Southern Riparian Forest	CDFW Sensitive Habitat	Dense riparian forests found along streams and rivers. Characteristic plant species include western sycamore, cottonwood, and many other wetland plants.	No	**Absent.**
Southern Sycamore Alder Riparian Woodland	CDFW Sensitive Habitat	Occurs below 2,000 meters in elevation, sycamore and alder often occur along seasonally-flooded banks; cottonwoods and willows are also often present. Poison oak, mugwort, elderberry and wild raspberry may be present in understory.	Yes	**Present**.

U.S. Fish and Wildlife Service (USFWS) - Federal
END- Federal Endangered
THR- Federal Threatened

California Department of Fish and Wildlife (CDFW) - California
END- California Endangered
THR- California Threatened
FP- California Fully Protected
CSC- California Species of Concern
WL- Watch List

California Native Plant Society (CNPS)
California Rare Plant Rank
1A Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere
1B Plants Rare, Threatened, or Endangered in California and Elsewhere
2B Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere
3 Plants About Which More INofrmation is Needed – A
4 Plants of Limited Distribution – A Watch List

Threat Ranks
0.1- Seriously threatened in California
0.2- Moderately threatened in California
0.3- Not very threatened in California

APPENDIX E
NAHC CORRESPONDENCE

CITY OF FONTANA
CALIFORNIA

LOCAL GOVERNMENT
TRIBAL CONSULTATION REQUEST
NATIVE AMERICAN HERITAGE COMMISSION
1556 Harbor Blvd.
West Sacramento, CA 95691
916-373-3710 phone
916-373-5471 fax

Project Title: City of Fontana General Plan and EIR Update

Local Government/Lead Agency: City of Fontana

Contact Person: Catherine Lin, AICP – Associate Planner

Phone: (909) 428-8860 **Fax:** (909) 350-6588

Street Address: 8355 Sierra Avenue, Fontana, CA 92335

X General Plan Update/Downtown Specific Plan/Zoning and Development Code Update

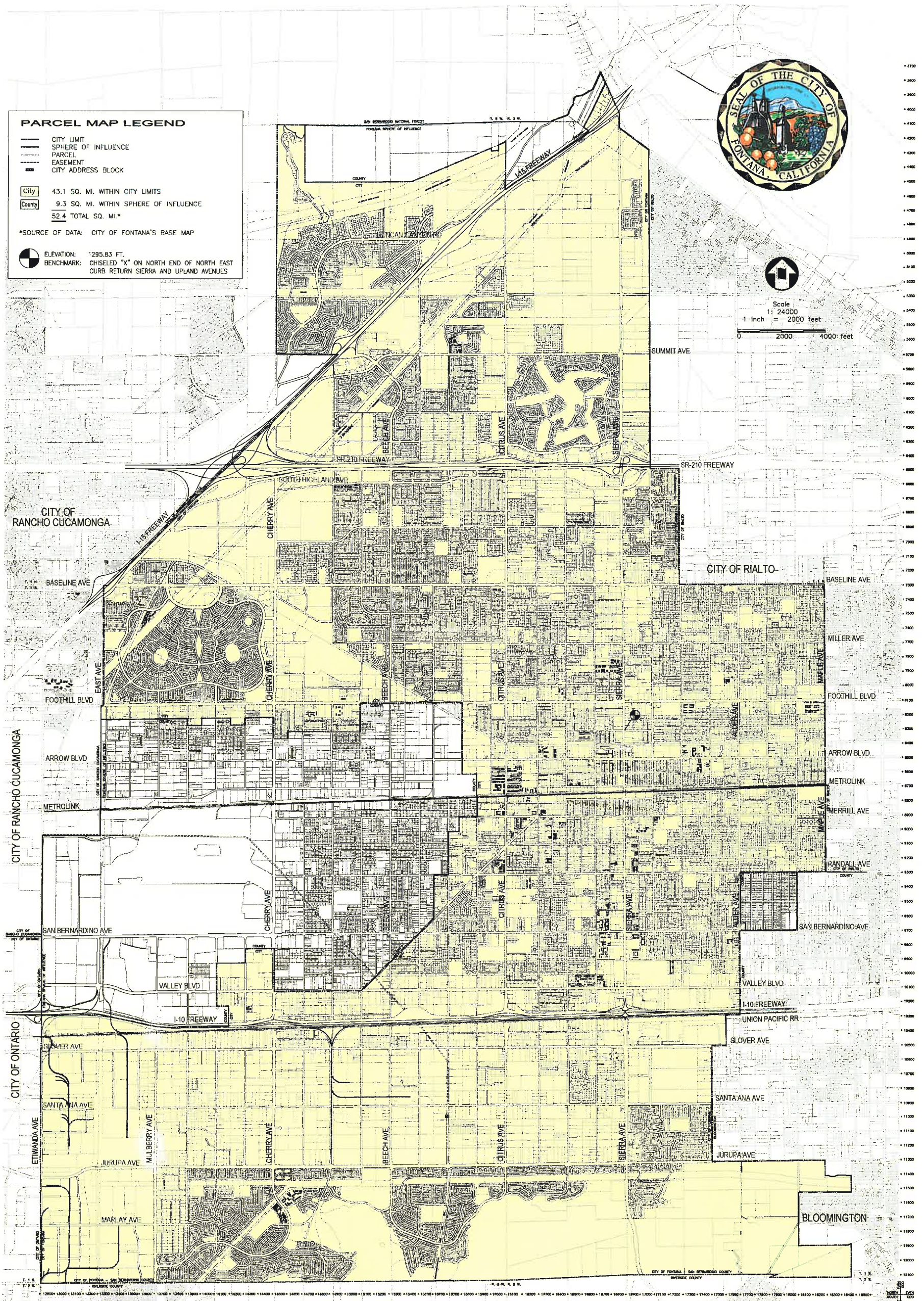
Project Description: On October 21, 2003, the City of Fontana adopted its most recent General Plan, which can be thought of as the City's constitution or long-range blueprint for its physical development. The State of California mandates that every city and county adopt a general plan. The General Plan details the community's vision by identifying goals and objectives over the next 10 to 20 years. The City of Fontana, California is undertaking an update in 2015 to update this General Plan and the General Plan EIR. In addition, with the General Plan Update process, the City of Fontana will also develop a Specific Plan for the Downtown area, and conduct a comprehensive update of the City's Zoning and Development Code.

Request: The City of Fontana is requesting contact information from the NAHC for tribes with traditional lands or places located within geographical limits (see attached map) of the city that may be affected by the proposed changes under the General Plan and General Plan EIR update.

CITY OF FONTANA

SAN BERNARDINO COUNTY
STATE OF CALIFORNIA

(CITY LIMITS AS OF SEPTEMBER 16, 2014)



STATE OF CALIFORNIA Edmund G. Brown Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710
Fax (916) 373-5471
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

March 3, 2016

Catherine Lin / James R. Troyer, AICP
City of Fontana
8353 Sierra Avenue
Fontana, CA 92335

Sent via e-mail:
jtroyer@fontana.org
Number of pages: 4

RE: SCH# 2016021099, Fontana Forward General Plan Update Project, City of Fontana, San Bernardino County, California

Dear Ms. Lin / Mr. Troyer:

The Native American Heritage Commission has received the Notice of Preparation (NOP) for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code § 21000 et seq.), specifically Public Resources Code section 21084.1, states that a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, § 15064.5 (b) (CEQA Guidelines Section 15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an environmental impact report (EIR) shall be prepared. (Pub. Resources Code § 21080 (d); Cal. Code Regs., tit. 14, § 15064 subd.(a)(1) (CEQA Guidelines § 15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources with the area of project effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code § 21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code § 21084.3 (a)). **AB 52 applies to any project for which a notice of preparation or a notice of negative declaration or mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. § 800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments. **Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws**.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
    - **a.** A brief description of the project.
    - **b.** The lead agency contact information.
    - **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code § 21080.3.1 (d)).
    - **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code § 21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code § 21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or environmental impact report. (Pub. Resources Code § 21080.3.1(b)).
    a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code § 65352.4 (SB 18). (Pub. Resources Code § 21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
    a. Alternatives to the project**.**
    b. Recommended mitigation measures**.**
    c. Significant effects**.** (Pub. Resources Code § 21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
    a. Type of environmental review necessary.
    b. Significance of the tribal cultural resources.
    c. Significance of the project's impacts on tribal cultural resources.
    d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code § 21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code sections 6254 (r) and 6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code § 21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
    a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
    b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code section 21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code § 21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
    a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
    b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code § 21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code section 21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code section 21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code § 21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code section 21084.3 (b). (Pub. Resources Code § 21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
    a. Avoidance and preservation of the resources in place, including, but not limited to**:**
        i. Planning and construction to avoid the resources and protect the cultural and natural context.
        ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
  i. Protecting the cultural character and integrity of the resource.
  ii. Protecting the traditional use of the resource.
  iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code § 21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a nonfederally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code § 815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code § 5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An environmental impact report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code sections 21080.3.1 and 21080.3.2 and concluded pursuant to Public Resources Code section 21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code section 21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code § 21082.3 (d)).

This process should be documented in the Cultural Resources section of your environmental document.

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code § 65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code § 65352.3 (a)(2)).

2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.

3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code section 65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code sections 5097.9 and 5097.993 that are within the city's or county's jurisdiction. (Gov. Code § 65352.3 (b)).

4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:

a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or

b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have been already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
    a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
    b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
    a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, section 15064.5(f) (CEQA Guidelines section 15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
    b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
    c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code section 7050.5, Public Resources Code section 5097.98, and Cal. Code Regs., tit. 14, section 15064.5, subdivisions (d) and (e) (CEQA Guidelines section 15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

Please contact me if you need any additional information at gayle.totton@nahc.ca.gov.

Sincerely,



Gayle Totton
Associate Government Planning Analyst

cc: State Clearinghouse

APPENDIX F
LOCAL HAZARD MITIGATION PLAN

City of Fontana

Local Hazard Mitigation Plan



June 2017

This document was supported by HSGP Grant No. 2015-0078 awarded by the U.S. Department of Homeland Security (DHS) Federal Emergency Management Agency (FEMA). Points of view, opinions, findings, and conclusions expressed in this document are those of the authors and do not necessarily represent the official position of policies of FEMA or DHS. DHS/FEMA reserves a royalty-free, non-exclusive, and irrevocable license to reproduce, publish, and use these materials and to authorize others to do so.

INTENTIONAL BLANK PAGE

Table of Contents

Section 1. Introduction 10
1.1 City of Fontana 10
1.2 Purpose of the Plan 10
1.3 Authority 11
1.4 What's New 11
1.4.1 New Hazard Profiles 11
1.4.2 Identifying the Problem 11
1.4.3 Updated Mitigation Strategies 11
1.5 Community Profile 12
1.5.1 Physical Setting New 12
1.5.2 History 14
1.5.3 Climate 15
1.5.4 Demographics 16
1.5.5 Existing Land Use 18
1.5.6 Development Trends 21
Section 2. Plan Adoption 23
2.1 Adoption by Local Governing Body 23
2.2 Promulgation Authority 23
2.3 Primary Point of Contact 23
Section 3. Planning Process 24
3.1 Preparing for the Plan 24
3.1.1 Planning Team 25
3.2 Coordination with Other External Jurisdictions, Agencies, and Organizations 26
3.3 Public Involvement/Outreach 26
3.4 Assess the Hazard 27
3.5 Set Goals 27
3.6 Review and Propose Mitigation Measures 28
3.7 Draft the Hazard Mitigation Plan 30
3.8 Adopt the Plan 30
Section 4. Risk Assessment 32
4.1 Hazard Identification 32

4.1.1 Hazard Screening Criteria 32
4.1.2 Hazard Assessment Matrix 33
4.1.3 Hazard Prioritization 34
4.2 Hazard Profiles 35
4.3 Flood Hazard Profile 36
4.3.1 Regulatory Environment 36
4.3.2 Past Flood Occurrences 39
4.3.3 Location/ Geographic Extent 40
4.3.4 Magnitude/ Severity 41
4.3.5 Frequency/ Probability of Future Occurrences 42
4.3.6 Flooding due to Dam Inundation 44
4.4 Wildfire Hazard Profile 46
4.4.1 Regulatory Environment 47
4.4.2 Past Occurrences 50
4.4.3 Location/Geographic Extent 53
4.4.4 Magnitude/Severity 54
4.4.5 Frequency/Probability of Future Occurrences 55
4.4.6 Future Development in High Fire Hazard Severity Zones 58
4.5 Earthquake /Geologic Hazard Profile 59
4.5.1 Regulatory Environment 62
4.5.2 Past Occurrences 64
4.5.3 Location/Geographic Extent 69
4.5.4 Magnitude/Severity 71
4.5.5 Frequency / Probability of Future Occurrences 74
4.6 Landslide Hazard Profile 77
4.6.1 Regulatory Environment 77
4.6.2 Past Occurrences 77
4.6.3 Location/Geographic Extent 77
4.6.4 Magnitude/Severity 77
4.6.5 Frequency/Probability of Future Occurrences 77
4.7 Climate Change 80
4.7.1 Regulatory Environment 80
4.7.2 City of Fontana 2017 General Plan 80

4.7.3 The Sustainable Communities and Climate Protection Act of 2008 80
4.7.4 Past Occurrences 83
4.7.5 Location/Geographic Extent 83
4.7.6 Magnitude/Severity 85
4.7.7 Frequency/Probability of Future Occurrences 86
4.7.8 Planned Development 87
4.7.9 Goals, Policies, and Objectives 87
4.7.10 Implementation Measures 87
4.7.11 Drought Hazard Profile 87
4.8 Terrorism Profile 96
4.8.1 Antiterrorism Regulatory Environment 96
4.8.2 Counterterrorism Regulatory Environment 96
4.8.3 Location/ Geographic Extent 99
4.8.4 Magnitude/ Severity 100
4.8.5 Frequency/ Probability of Future Occurrences 103
4.9 Wind Surge Hazard Profile 103
4.9.1 Historical Occurrences 105
4.10 Vulnerability Assessment 112
4.10.1 Methodology 112
4.10.2 Population and Assets 114
4.10.3 Hazus-MH Inputs 121
4.10.4 Hazard Specific Vulnerability 124
4.10.5 Flooding 125
4.10.6 Wildfire 133
4.10.7 Earthquake 138
4.10.8 Landslide 145
4.10.9 Climate Change/Drought 149
4.10.10 Terrorism 151
Section 5. Community Capability Assessment 153
5.1 Active Mitigation Programs 153
5.2 Local Planning and Regulatory Capabilities 156
5.3 Administrative and Technical Mitigation Capabilities 158
5.4 Local Fiscal Capabilities 161

5.5 San Bernardino County Capabilities 164
5.5.1 Multi-Hazard Capabilities 164
5.5.2 County Wildfire Mitigation Programs 164
5.5.3 County Flood Mitigation Programs 164
5.5.4 San Bernardino County Public Education and Alert Programs 164
5.6 Local, State and Federal Fiscal Resources 166
Section 6. Mitigation Strategy 170
6.1 Mitigation Overview 170
6.2 Mitigation 5 Year Progress Report 170
6.3 Mitigation Goals, Objectives, and Projects 172
6.3.1 Considering Mitigation Alternatives 183
6.4 Mitigation Priorities 186
6.4.1 Prioritization Process 186
6.5 Mitigation Strategy 189
Section 7. Plan Maintenance 190
7.1 Monitoring, Evaluating and Updating the LHMP 190
7.1.1 Plan Adoption 190
7.1.2 Implementation 190
7.1.3 Future Participation 191
7.1.4 Schedule 191
7.1.5 Process 192
7.2 Incorporation into Existing Planning Mechanisms 192
7.3 Continued Public Involvement 193

List of Figures

Figure 1-1: World Street Map (Credit: ESRI) 13
Figure 1-2: City of Fontana Demographics 18
Figure 1-3: General land use map legend 19
Figure 1-4: Land Use Map (Credit: City of Fontana General Plan) 20
Figure 1-5: City Land Use 21
Figure 4-1: Flood Hazard Map 43
Figure 4-2: Dam Inundation Areas in Fontana 45
Figure 4-3: Fire Behavior Triangle 47
Figure 4-4: Wildfire History Map 52
Figure 4-5: Fire Perimeter City of Fontana 54
Figure 4-6: Wildfire Hazard Severity Zones 56
Figure 4-7: Wildfire Return Interval Map 57
Figure 4-8: Surface Rupture 61
Figure 4-9: Active Fault Map 70
Figure 4-10: Great Shakeout Scenario MMI Classes 73
Figure 4-11: UCERF 3 Fault Probabilities 76
Figure 4-12: Slope of Land in San Bernardino County 78
Figure 4-13: Landslide Hazard Susceptibility 79
Figure 4-14: Climate Impact Regions 82
Figure 4-15: July Decadal Average High Temperature Map; 2010 84
Figure 4-16: July Decadal Average High Temperature Map; 2090 84
Figure 4-17: California Historical and Projected Temperature Increases - 1961 to 2099 86
Figure 4-18: US Drought Monitor Map for the State of California on August 23, 2016 90
Figure 4-19: USSDO Drought Tendency Map (Valid August 18- November 30, 2016) 91
Figure 4-20: Month SPI through the end of August 2016 for San Bernardino County 92
Figure 4-21: Vegetation Drought Response index - California Region 4 for August 21, 2016 93
Figure 4-22: Types of Terrorist Attacks in California from 1970- Present 97
Figure 4-23: Total and Fatal Terrorist Attacks in the United States by Year 98
Figure 4-24: International Terrorist Attacks Against the United States 99
Figure 4-25: Data Source and Methodology 113
Figure 4-26: Median Household Income Distribution Map 116
Figure 4-27: Population under 18 117
Figure 4-28: Population Over 65 118
Figure 4-29: Census Block Building and Content Exposure Values 122
Figure 4-30: Census Tract Building and Content Exposure Values 123
Figure 4-31: Population Exposed to NFIP Flood Zones 125
Figure 4-32: Total Building and Content Loss by Occupancy Type 131
Figure 4-33: Total Building and Content Loss by Occupancy Type 132
Figure 4-34: Population at risk from Wildfire Hazards 134
Figure 4-35: Population Exposure to the Great Shakeout EQ Shake Severity Zone 139
Figure 4-36: Estimated Building and Content by Occupancy Type 144
Figure 4-37: Population Exposure to Landslides 145

List of Tables

Table 4-1: Hazard Assessment Matrix 33
Table 4-2: Special Flood Hazard Area 41
Table 4-3: Wildfire Occurrences 2003-2016 51
Table 4-4: Earthquake Historical Occurrences 64
Table 4-5: Moment Magnitude Scale 71
Table 4-6: Modified Mercalli Scale 72
Table 4-7: Southern California Region Earthquake Probability 74
Table 4-8: From APG: Table 41. Summary of Cal-Adapt Climate Projections for the Desert Region 85
Table 4-9: Terrorist Attacks in San Bernardino County 97
Table 4-10: Event Profiles for Terrorism and Technological Hazards 103
Table 4-11: Wind Surge Historical Occurrences 111
Table 4-12: Critical Facility Points 120
Table 4-13: Linear Utilities 120
Table 4-14: Hazus Flood Census Block Input Values 121
Table 4-15: Hazus Earthquake Census Tract Input Values 122
Table 4-16: Parcels Exposed to NFIP Flood Zones 126
Table 4-17: Critical Facility Exposed to NFIP Flood Zones 128
Table 4-18: Lifelines Exposure to NFIP Flood Zones 129
Table 4-19: Flood Loss Estimation (Based on Depth) in NFIP Flood Zones 129
Table 4-20: 100-Year Flood Loss Estimation (Based on Depth) in NFIP Flood Zones by Occupancy Type 130
Table 4-21: 500-Year Flood Loss Estimation (Based on Depth) in NFIP Flood Zones by Occupancy Type 131
Table 4-22: Residential Buildings and Content at Risk from Wildfire 135
Table 4-23: Critical Facility Exposure to Wildfire 136
Table 4-24: Lifelines with Wildfire Risk 137
Table 4-25: Residential Parcel Value Exposure from Southern California Great Shakeout 140
Table 4-26: Critical Facilities with EQ Risk Southern California Great Shakeout 141
Table 4-27: Lifelines with EQ Risk; Southern California Great Shakeout Scenario 143
Table 4-28: Estimated Building and Content Loss Great Shake Out Scenario EQ 144
Table 4-29: Improved Residential Parcel Exposure 146
Table 4-30: Critical Facilities at Risk of Landslide 147
Table 4-31: Transportation and Lifelines at Risk of Landslide 148
Table 4-35: FEMA Vulnerability Rating 152
Table 5-2: Planning and Regulatory Capabilities 158
Table 5-3: Administrative and Technical Capabilities 160
Table 5-4: Local Fiscal Capabilities 163
Table 5-5: County Flood Mitigation Programs 164
Table 5-6: Public Education and Alert Programs 166

Appendices

Appendix A: City Resolution....A-1
Appendix B: Public Outreach Events....B-1
Appendix C: Public Survey....C-1
Appendix C.1: Survey – Summary of Responses and Trends....C-2
Appendix D: Stakeholder Meeting Agendas....D-1
Appendix E: Hazard Screening Maps....E-1
Map 1: City of Fontana Earthquake....E-1
Map 2: FEMA Flood Hazard Areas....E-2
Map 3: City of Fontana HazMat Release....E-3
Map 4: City of Fontana Train Derailment....E-4
Map 5: City of Fontana Utility Failure....E-5
Map 6: City of Fontana Wind Surges....E-6
Map 7: Geologic Hazard Overlays – Landslide & Liquefaction Susceptibility (South)....E-7
Map 8: Geologic Hazard Overlays – Landslide & Liquefaction Susceptibility (North)....E-8
Map 9: USGS Liquefaction Susceptibility Zones....E-9

Section 1. Introduction

The LHMP update is a "living document" that should be reviewed, monitored, and updated to reflect changing conditions and new information. As required, the LHMP must be updated every five (5) years to remain in compliance with regulations and Federal mitigation grant conditions. In that spirit, this Hazard Mitigation Plan (LHMP) is an update of the CITY OF FONTANA'S HAZARD MITIGATION PLAN approved by FEMA in October 2012. This LHMP presents updated information regarding hazards being faced by THE CITY OF FONTANA.

1.1 City of Fontana

The City of Fontana was incorporated on June 25, 1952. Fontana is located in San Bernardino County with the cities of Ontario and Rancho Cucamonga to the West and Rialto and San Bernardino to the East. This 42.43 square mile community has an average elevation of 1,237 feet.

The Santa Ana River watershed is located in southern California, south and east of the City of Los Angeles. The watershed includes much of Orange County, the north western corner of Riverside County, the southwestern corner of San Bernardino County, and a small portion of Los Angeles County.

The Santa Ana River bisects the City of Colton, just to the east of the City of Fontana. It enters Colton in the Northeast corner and exits Colton in the Southwest corner.

1.2 Purpose of the Plan

The intent of hazard mitigation is to reduce and/or eliminate loss of life and property. Hazard mitigation is defined by FEMA as "*any action taken to reduce or eliminate the long-term risk to human life and property from natural hazards*." A "hazard" is defined by FEMA as "*any event or condition with the potential to cause fatalities, injuries, property damage, infrastructure damage, agricultural loss, environmental damage, business interruption, or other loss*."

The purpose of the Hazard Mitigation Plan (LHMP) is to demonstrate the plan for reducing and/or eliminating risk in City of Fontana. The LHMP process encourages communities to develop goals and projects that will reduce risk and build a more disaster resilient community by analyzing potential hazards.

After disasters, repairs and reconstruction are often completed in such a way as to simply restore to pre-disaster conditions. Such efforts expedite a return to normalcy; however, the restoring of things to pre-disaster conditions sometimes result in feeding the disaster cycle; damage, reconstruction, and repeated damage. Mitigation is one of the primary phases of emergency management specifically dedicated to breaking the cycle of damage. Hazard mitigation is distinguished from other disaster management functions by measures that make Fontana development and the natural environment safer and more disaster resilient. Mitigation generally involves alteration of physical environments, significantly reducing risks and vulnerability to hazards by altering the built environment so that life and property losses can be

avoided or reduced. Mitigation also makes it easier and less expensive to respond to and recover from disasters.

Also with an approved (and adopted) LHMP, City of Fontana is eligible for federal disaster mitigation funds/grants (Hazard Mitigation Grant Program, Pre-Disaster Mitigation, and Flood Management Assistance) aimed to reduce and/or eliminate risk.

1.3 Authority

In 2000, FEMA adopted revisions to the Code of Federal Regulations. This revision is known as "Disaster Mitigation Act (DMA)." DMA 2000, Section 322 (a-d) requires that local governments, as a condition of receiving federal disaster mitigation funds, have a Hazard Mitigation Plan (LHMP) that describes the process for assessing hazards, risks and vulnerabilities, identifying and prioritizing mitigation actions, and engaging/soliciting input from the community (public), key stakeholders, and adjacent jurisdictions/agencies.

Senate Bill No. 379 will, upon the next revision of a local hazard mitigation plan on or after January 1, 2017, or, if the local jurisdiction has not adopted a local hazard mitigation plan, beginning on or before January 1, 2022, require the safety element to be reviewed and updated as necessary to address climate adaptation and resiliency strategies applicable to that city or county.

1.4 What's New

For this 2017 LHMP Update, some changes were made in the document to reflect changes in development and priorities.

1.4.1 New Hazard Profiles

In addition to the hazards profiled in the 2012 LHMP (Earthquake, Wind Surges and Wildfire) this update also recognizes Landslide, Flood, Terrorism, Climate Change and Drought as being significant hazards to the City of Fontana. This decision was based on the hazard prioritization process performed by the Task Force during Task Force Meeting #1 and is explained in detail in Section 4.1.2

1.4.2 Identifying the Problem

Before mitigation goals, objectives and actions were formulated, problem statements were created for this 2017 LHMP Update by the Task Force. Problem statements are an important step in accessing the changing priorities of the City. Problem statements can be found in Section **Error! eference source not found.**

1.4.3 Updated Mitigation Strategies

In order to reflect the progress in local mitigation efforts made since the 2012 LHMP, the mitigation actions from the 2012 LHMP were reviewed to address if they have been completed, deleted, or deferred. New mitigation actions were developed to reflect changes in priorities and this process is

explained in Section 6.3 Only the information and data still valid from the 2011 plan was carried forward as applicable into this current update of the LHMP. In fact, based in part on the issuance of new 2011 and 2013 planning guidance, this 2017 plan has been significantly updated and rewritten.

1.5 Community Profile

1.5.1 Physical Setting New

Fontana is located on an alluvial plain valley that is defined by the steeply rising range front of the eastern San Gabriel Mountains to the north, the Lytle Creek wash to the east and the Jurupa Mountains to the south. The San Bernardino and San Gabriel Mountain ranges that lie to the north of the city rise to elevations of over 9,000 feet. The Jurupa Mountains are a low lying relatively small mountain range lying to the south of the city. The Jurupa Mountains rise to elevations of approximately 3,000 feet. Elevations in Fontana range from a low of about 850 feet to about 2,000 feet in the north end.

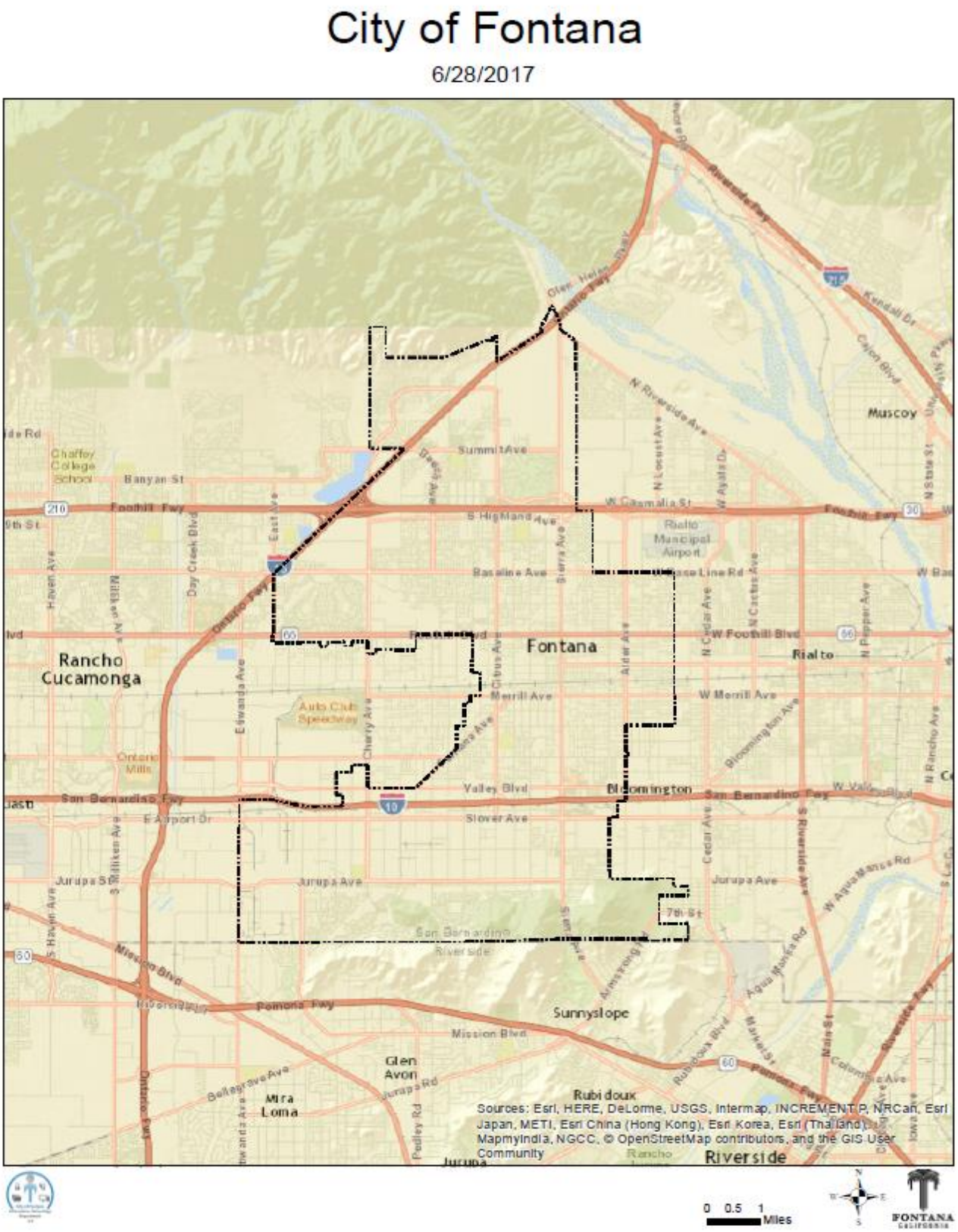


Figure 1-1: World Street Map

Fontana lies at the intersections of State Routes 10, 15 and the 210. State Routes 10 and 210 connect the northern and southern ends of Fontana to Los Angeles. State Route 15 connects Fontana to the High Desert, Las Vegas and San Diego.

The City of Fontana has gone through major transformations from its roots as a rich agricultural town where farmers planted and grew citrus and raised poultry in the 19th century, to becoming the region's leading producer of steel and steel related products in the 1940's through the 1970's. California Steel continues the industry of steel production today, where the former Kaiser steel plant was located.

Today, Fontana is both a bedroom community, with a commuting population of workers, and, due to its suburban location near several major freeway and rail transportation corridors, is also a major Inland Empire hub of warehousing and distribution centers. These uses are located primarily in the City's southern half, adjacent to the SR 10 corridor. Heavy industrial areas are also located in the south and western portions of the city.

The climate for Fontana is warm during summer when temperatures tend to be in the high 90's and cool during winter when temperatures tend to be in the 50's. The warmest month of the year is July with an average maximum temperature of 95 degrees Fahrenheit, while the coldest month of the year is December with an average minimum temperature of 44 degrees Fahrenheit. The city is frequently affected by the strong, hot, and dry Santa Ana Winds as they blow through the nearby Cajon Pass of the San Gabriel Mountains, from the Mojave Desert. The annual average precipitation is 14.77 inches.

1.5.2 History

Fontana's history dates back to 1887, when our City's precursor, the town site of Rosena was located in the area of present-day downtown. A.B. Miller, an early agricultural landowner who figures prominently in our City's founding, rededicated Rosena as Fontana in 1913. Our area was widely settled by the 1930s, from Baseline to the Santa Fe Railway. Two other rural settlements, Grapeland to the north, and the Declezville quarry to the south flanked our community in those early years.

From the beginning, the development of Fontana radiated outward from our Downtown – this may be part of the reason it remains so important to us to maintain it as the heart of the community today. The establishment of the Kaiser Steel Mill changed the character of our community from rural to industrial in 1942. The population and intensity of development in the community increased dramatically in the next decade, and the City incorporated as Fontana in 1952. Fontana is a General Law city under the Council/Manager form of government.

We have experienced waves of development since incorporation: industrial, residential and commercial, first radiating from the downtown within the core of the City, now north from SR 210 and south and east from the core. Our economy has continued to diversify, with steel production playing less of a role since the 1984 closure of Kaiser Steel, and the development of the trucking and distribution industries. The northern portion of our community, including Grapeland, was agricultural in character and remained so until the beginning of the 1980s when residential development began to move northward. We are now the fastest growing community in the Inland Empire, with residential and commercial development continuing to move northward, due in part to the supply of vacant land there, and the access provided to it by the SR 210 Freeway and Interstate 15.

1.5.3 Climate

The climate in Fontana is for the most part warm and temperate. The winter months are much rainier than the summer months. The city is frequently affected by the strong, hot and dry Santa Ana winds, since they blow through the nearby Cajon Pass of the San Gabriel Mountains, from the Mojave Desert. Fontana is very hot in the summer, reaching over 100 degrees Fahrenheit on several days of the year. The average high in July is over 95 degrees, while the average low in January is a little over 45 degrees. January is the month when Fontana receives the most rainfall, with an average of 3.5 inches, while July is the driest month with 0 inches on average. Wind speeds in the city are upwards of 20 mph several days of the year.

1.5.4 Demographics

CITYWIDE DEMOGRAPHICS		
Population		
2016 Data (3 zip codes 92335, 92336, 92337)	204,961	
Growth 2000-2010	18.78%	
2010 Census	196,069	
2000 Census	165,065	
1990 Census	114,167	
Growth 1990 - 2000	44.58%	
Households		
2021 Projection	52,004	
2016 Data	50,557	
Growth 2000-2010	15.30%	
2010 Census	49,116	
2000 Census	42,601	
1990 Census	27,343	
Growth 1990 - 2000	55.80%	
2016 Est. Population by Single Classification Race	204,961	
White Alone	94,468	46.1%
Black Alone	19,052	9.3%
American Indian Alone	1,985	1.0%

Asian Alone	14,165	6.9%
Pacific Islander Alone	559	0.3%
Some Other Race Alone	64,432	31.4%
Two or More Races	10,300	5.0%
Hispanic Origin (Any Race)	143,741	70.1%
2016 Tenure of Occupied Housing Units	50,558	
Owner Occupied	29,153	68.4%
Renter Occupied	13,448	31.6%
2016 Average Household Size	4.04	
2016 Est. Households by Household Income	50,557	
Income Less than $15,000	4,793	7.8%
Income $15,000 - $24,999	4,306	7.3%
Income $25,000 - $34,999	5,129	9.3%
Income $35,000 - $49,999	7,768	13.3%
Income $50,000 - $74,999	12,821	18.5%
Income $75,000 - $99,999	9,724	16.4%
Income $100,000 - $149,999	6,502	17.4%
Income $150,000 - $199,999	1,646	6.3%
Income More than $200,000	941	3.7%
2016 Est. Average Household Income	$79,416	
2016 Est. Median Household Income	$64,520	
2016 Est. Per Capita Income	$19,619	

Source: U.S. Bureau of the Census 2010. ESRI forecasts for 2016 for zip codes 92335, 92336, 92337

Figure 1-2: City of Fontana Demographics

1.5.5 Existing Land Use

The City of Fontana encompasses approximately 42.4 gross square miles of land area. The land use element is a driving element in the general plan. The land use element sets out land use designations and pattern and intensity of land use, the land use element affects circulation, housing, public services and infrastructure, safety, conservation/open space, parks and recreation, noise, and air quality. A land use map is included as Figure 1-3 on the following page.

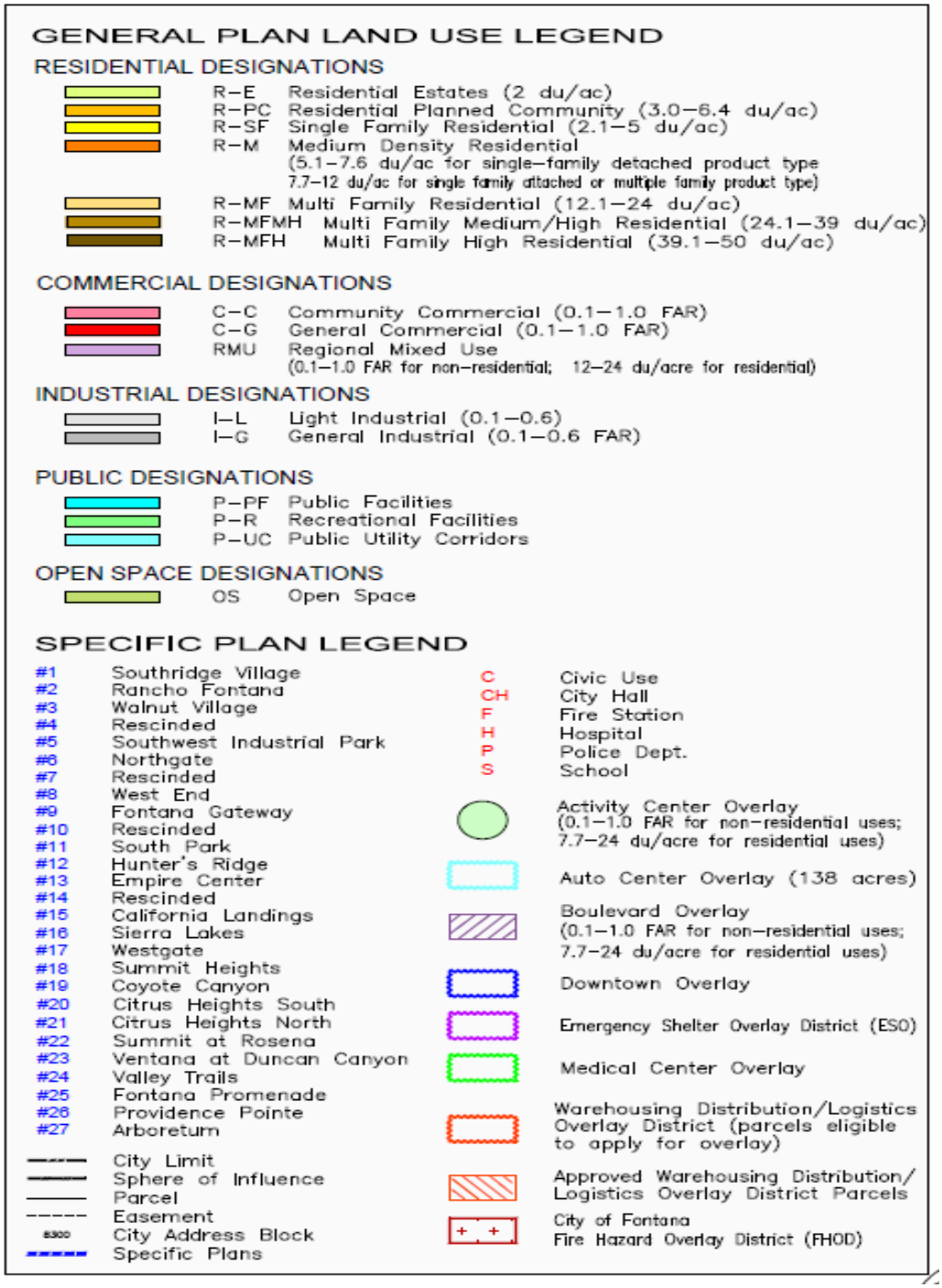


Figure 1-3: General land use map legend

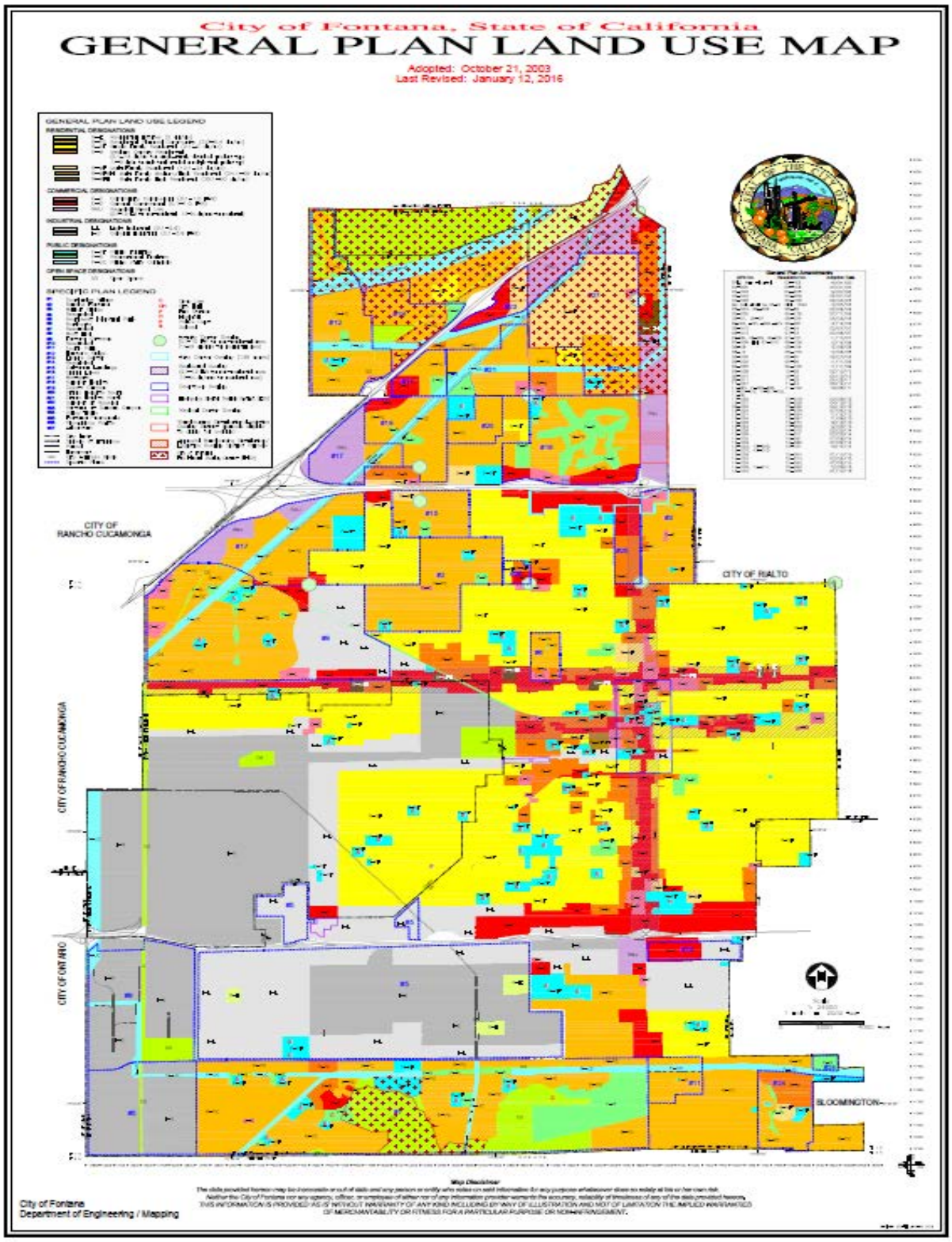


Figure 1-4: Land Use Map (Credit: City of Fontana General Plan)

The land use data in this figure is based on data obtained by the City's Engineering GIS Section. The following land use designations are as follows:

Residential – Residential land uses within the City include single-family, multi-family, mobile homes, board and care homes, and convalescent homes. The land use designation allows densities ranging from 2 to 24 dwellings units per acre.

Commercial – Commercial land uses within the City include retail development including shopping centers, restaurants, and office uses, businesses providing professional services, including legal services, financial institutions, administrative and corporate offices, medical offices, and clinics. Additionally, the general commercial designation is intended for retailing, wholesaling, and services activities, including automobile repair, automobile dealerships and malls.

Industrial – Industrial designated lands within the City allow more intensive uses, such as business parks, research and development, technology centers, corporate and support offices, clean industry and supporting retail uses, auto, truck and equipment sales and related services. Moreover, the General Industrial designation may include: manufacturing, fabrication, assembly, processing, trucking, equipment, warehousing and distribution, automobile and truck sales and services.

Public Designations – The Public Facilities designation identifies the location of properties in public or quasi-public ownership, such as existing schools; the facilities of public and quasi-public agencies such as the City, County water and sewer districts, and fire protection districts; and the locations of hospitals and quasi-public institutions. The Recreation Facilities designation is used for regional and local parks, and any recreational facility operated by a public or quasi-public agency. The Public Utility Corridors designation is used to indicate lands that contain easements for public utilities. The Open Space areas, which for environmental reasons have been planned to remain in its natural condition, including the Jurupa Hills and the foothills of the San Gabriel Mountains bordering the National Forest.

Land Use	Acres	Percent of City
Residential	14,772	58.0
Commercial	3,244	12.7
Industrial	4,589	17.9
Public Facilities	2,909	11.4
Total	25,514	100.0

Figure 1-5: City Land Use

1.5.6 Development Trends

The City of Fontana has been one of the fastest growing cities in San Bernardino County. Fontana is a young, rapidly-growing and ethnically diverse community. The City of Fontana is a vibrant city, with multiple opportunities for new development, with large portions of undeveloped land. Much of the remaining land in the northern portion of Fontana was approved for development through specific plans and associated development agreements that remain in place. The southern portion of Fontana continues to thrive with the development of several large industrial buildings, as well

as commercial and retail development that provides services to the residential development existing in that area. In addition, there are many opportunities for infill development and even redevelopment in Fontana's established neighborhoods in the core/central area of Fontana.

All future development/redevelopment projects will be constructed to occur in accordance with the General Plan Land Use Element and will consider all potential hazards identified within this plan. Additionally, all development will be incompliance with all Fire, Flood, and Seismic codes of the City and State at the time of development, as well as the current design standards and building codes, and are not expected to contribute to community vulnerability from natural or technological hazards.

Section 2. Plan Adoption

2.1 Adoption by Local Governing Body

The City of Fontana City Council is responsible for the review, approval, and adoption of the Local Hazard Mitigation Plan (LHMP) update for the City of Fontana. It is also the intent of the City of Fontana City Council to take appropriate actions to ensure the updated LHMP remains as a part of the City of Fontana General Plan.

2.2 Promulgation Authority

The Promulgator Authority for the adoption of the Hazard Mitigation Plan for City of Fontana and incorporation of the LHMP into the City of Fontana General Plan is:

Acquanetta Warren – City Mayor

Jesus "Jesse" Sandoval – Mayor Pro Tem

John Roberts – Council Member

Michael Tahan – Council Member

Jesse Armendarez – Council Member

2.3 Primary Point of Contact

The Primary Point of Contact for information regarding this plan is:

William P. Green
Chief of Police
Fontana Police Department
17005 Upland Avenue
Fontana, CA 92335
(909) 350-7701
Email: bgreen@fontana.org

Jeff Birchfield
Assistant Chief, Division
San Bernardino County Fire Department
17001 Upland Avenue
Fontana, CA 92335
(909) 349-3048
Email: jbirchfield@sbcfire.org

Debbie Brazill
Deputy City Manager
City of Fontana
8353 Sierra Avenue
Fontana, CA 92335
(909) 350-6727
Email: dbrazill@fontana.org

Zai Abubakar
Director of Community Development
City of Fontana
8353 Sierra Avenue
Fontana, CA 92335
(909) 350-7625
Email: zabubakar@fontana.org

Section 3. Planning Process

3.1 Preparing for the Plan

For the update to the Local Hazard Mitigation Plan, the City of Fontana joined with San Bernardino County Fire Department Office of Emergency Services (OES) who coordinated the update of the San Bernardino County Operational Area Multi-Jurisdictional Multi-Hazard Mitigation Plan. As required by the Department of Homeland Security's Federal Emergency Management Agency (DHS-FEMA), all Hazard Mitigation Plans (LHMP) must be updated, adopted, and approved every five (5) years. The purpose of the update is to validate and incorporate new information into the plan and identify progress that has been made since the last approval of the plan. It should also be noted that an approved LHMP is require to receive federal assistance under the Hazard Mitigation Grant Program (HMGP or Pre-Disaster Mitigation (PDM) programs.

San Bernardino County Fire OES hired a consultant to support the County, Cities, and Special Districts to update six (6) San Bernardino County jurisdictional plans, as well as thirty-one (31) single-jurisdictional plans. The support provided by OES, as well as the consultant, offers experience, field-tested Hazard Mitigation and a planning professional who have developed similar comprehensive LHMP's. This support includes providing technical expertise, resource material and tools, not only to expedite the LHMP updated process, but also to ensure that the updates are in compliance with federal requirements of the program. The tools, resource material, and other project related information are being maintained on a project portal to ensure the same information is available to all participants.

The City initiated its plan update by meeting the requirements of Title 44, Code of Federal Regulations, and Part 201 (44CFR201.6) through the initial implementation of the 2005 Local Hazard Mitigation Plan.

The following regulations (44CFR 201.6) were adhered to:

1. Organize resources: The Local Advisory Task Force identified resources, including city staff, agencies, and local community members that could provide technical expertise and historical information needed in the development of the LHMP.

2. Risk assessment: The Task Force identified the hazards specific to the City, and developed the risk assessment for the four identified hazards. The Task Force reviewed the risk assessment, including the vulnerability assessment, prior to and during the development of the mitigation strategies.

3. Community capability assessment: The Task Force reviewed current administrative and technical, legal and regulatory, and fiscal capabilities to determine whether existing provisions and requirements adequately address relevant hazards.

4. Develop mitigation strategies: After reviewing the risks posed by each hazard, the Task Force developed a comprehensive range of potential mitigation goals, objectives, and projects. Subsequently, the Task Force identified and prioritized the actions to be implemented.

5. Monitor progress: The Task Force developed an implementation process to ensure the success of an ongoing program to minimize hazard impacts to the community.

The City of Fontana is in the process of implementing a comprehensive revision to the General Plan, which is anticipated to be completed by the end of 2017. Reference to the Local Hazardous Mitigation Plan is included in the Safety Element of the General Plan.

3.1.1 Planning Team

The Fontana Police Department was the lead agency for the development of the initial LHMP; as part of the update to the LHMP, the City formed an internal/external planning team to include representatives from city departments, external stakeholders/agencies, and the general public. The following planning team developed and implemented the update to the City of Fontana Local Hazard Mitigation Plan, and represented a liaison and an oversight committee between internal/external groups where appropriate.

Core Planning Team Members included:

Deputy City Manager Debbie Brazill, City of Fontana Development Services

Chief Jeff Birchfield, San Bernardino County Fire Department

Chief Robert Ramsey, City of Fontana Police Department

Director of Community Development, Zai AbuBakar, City of Fontana Development Services

Fire Marshall Brian Headley, San Bernardino County Fire Department

Charles Hays, City of Fontana Public Works Director

Dan West, City of Fontana Public Works Manager

Luis Villalobos, City of Fontana Park Development Coordinator

Gil Estrada, City of Fontana, Building Official

Sergeant Kevin Goltara, City of Fontana Police Department

Cheryl Nagy, San Bernardino County Fire Department, OES

Dawn Rowe, City of Fontana Planning Department, Project Manager

Daisy Jimenez, City of Fontana Planning Department Planning Intern

Olga Hernandez, City of Fontana Police Department

Heather Howard, City of Fontana Police Department

Amber Smith, City of Fontana Police Department

Harry Katchadoorian, City of Fontana Engineering Department GIS Technician

Ray Cancel, CERT Class Instructor/Coordinator

The planning process for the City of Fontana Local Hazard Mitigation Plan update began with the San Bernardino County Kick-Off meeting on June 1, 2016. Additional meetings of the core planning team were held, as well as correspondence via e-mail and phone conversations.

3.2 Coordination with Other External Jurisdictions, Agencies, and Organizations

The primary mechanism for ensuring coordination with other agencies and organizations that could support mitigation plan development and implementation was the Local Advisory Task Force. At the beginning of the planning process, the Task Force identified a number of departments, organizations, businesses, special districts and non-governmental entities to be invited to participate in the plan development. All of the organizations were contacted via email or telephone and invited to participate as members of the Local Advisory Task Force. Those who responded positively were included as part of the Task Force.

3.3 Public Involvement/Outreach

The Local Advisory Task Force used a number of venues to inform the public of the planning effort and to solicit their input. The Task Force discussed several alternatives to the public input process that included:

1. Host targeted community-based stakeholder workshops
2. General Plan Open House Forum and stakeholders meetings
3. Attend various local community meetings
4. Presentation to Planning Commission
5. Host Community Fair, and
6. Public review on city web page

There were two community-based stakeholder workshops held at the Fontana Police Department. These workshops were advertised on the city website and through flyers at various customer service windows throughout the City. At the beginning of the workshops, an overview of the local hazard mitigation planning process and a risk analysis of the natural and human- caused hazards facing the City of Fontana was presented. The citizens then provided their input about their concerns about each hazard, what they are doing to prepare for and to mitigate high risk hazards and what activities the City should engage to prepare for, mitigate, and respond to the highest risk hazards. The same local hazard mitigation planning process overview was presented to various local community meetings that are included in Appendix A.

In addition, the City of Fontana is updating the General Plan, to include an update to the Safety Element as well as the Open Space Element. During several community meetings discussion in regards to the Safety Element were held with residents as well as local business owners who were given an overview of what the proposed update entailed.

A hazard mitigation plan public survey was conducted to gather information from residents about hazard related concerns. A copy of the survey and the summary of key results are included in Appendix C.

The city continues to hold many public meetings and provides notice of the meetings through posted agendas and through the City's web site. Once completed and prior to Council adoption of the Local Hazard Mitigation Plan, the item will be agendized for public hearing and posted for public review on the City's web site. The Task Force will determine how public comment, if offered, will be included in the draft plan prior to final adoption.

3.4 Assess the Hazard

In accordance with FEMA requirements, the 2017 LHMP Local Advisory Task Force identified and prioritized the natural and manmade hazards affecting Fontana and assessed the vulnerability from them. Results from this phase of the LHMP planning process aided subsequent identification of appropriate mitigation actions to reduce risk in specific locations from hazards. A comprehensive list of (7) natural and human-caused hazards was considered for analysis.

Natural Hazards Considered:

Earthquake	Flood/Winter Storms	Landslide
Wildfire	Wind Surge	

Human-caused Hazards Considered:

Terrorism

Climate Change/Drought

These hazards were ranked as low, medium or high based upon the perceived threat to the City. The analysis of these hazards is described in Section 4 of this plan. Initial hazard ranks were developed and presented to the Local Advisory Task Force. The ranks were adjusted based on data provided by the team. The hazards with significant potential for damage to Fontana are earthquake, wildfire, flood / winter storms, and wind surge.

3.5 Set Goals

The goals of the Local Hazard Mitigation Plan describe the overall direction the City of Fontana, through its departments, agencies, organizations, and citizens can take toward reducing its risk to natural and human-caused hazards. Part of the main goals of the Fontana's Mitigation Plan are:

3.5.1.1 Implement activities that assist in protecting lives by making homes, businesses, infrastructure, critical facilities, and other property more resistant to losses from natural and human-caused hazards.

3.5.1.2 Reduce losses and repetitive damage for chronic hazard events while promoting mitigation measures and insurance coverage for catastrophic hazards.

3.5.1.3 Coordinate with existing ongoing plans and programs so that high priority initiatives and projects to mitigate possible disaster impacts would be funded and implemented.

3.5.1.4 Develop and implement education and outreach programs to increase public awareness of the risks associated with natural and human-caused hazards in Fontana.

3.5.1.5 Strengthen communication and participation among and within public agencies, citizens, non-profit organizations, businesses, and industry to gain a vested interest in the implementation of mitigation measures to reduce the impact of natural hazards.

3.5.1.6 Reinforce emergency operations by increasing collaboration and coordination among public agencies, non-profit organization, business, and industry.

3.6 Review and Propose Mitigation Measures

The Plan will be regularly monitored and evaluated to measure its success in achieving its goals once implementation begins. A variety of mitigation measures that can affect hazards or the damage from hazards were examined. The mitigation activities are organized by hazard and fall within one of the following four categories:

3.6.1.1 Protect Life, Property, and the Environment

3.6.1.2 Public Awareness

3.6.1.3 Partnerships and Implementation

3.6.1.4 Emergency Services

Once the projects were identified, the Local Advisory Task Force utilized the STAPLEE methodology to assess and prioritize the projects.

STAPLEE stands for the following:

3.6.1.5 **Social:** Social criteria ae based on the idea that community consensus is a necessary precondition for successful implementation of mitigation measures (e.g. measures should be supported and accepted by the entire community). This also means that measures should not affect adversely a particular segment of the population or a particular neighborhood, or adversely impact local cultural values or resources.

3.6.1.6 **Technical**: Technical criteria address the technical feasibility of the proposed measures, in terms of effectiveness, secondary impacts, and the technical capabilities of the community to implement and sustain these measures.

3.6.1.7 **Administrative**: Administrative criteria address the administrative capabilities required to implement each mitigation measure. For example, does the City have the necessary organization, staff, and funding sources to implement and sustain the mitigation process?

3.6.1.8 **Political**: Political criteria consider the need for political support for mitigation measures. This means that all stakeholders in the political process, especially political organizations and institutions both inside and outside of the community, should support the measure.

3.6.1.9 **Legal**: Legal criteria are used to determine the appropriate legal authority necessary to implement each mitigation measure and whether such an authority can be delegated. The mitigation measure is examined from the standpoint of current statutes, codes, ordinances, and other regulations, as well as the possible legal ramifications of the measure's implementation.

3.6.1.10 **Economic:** Economic criteria address the cost-effectiveness of the proposed measure and its economic impact on the community. It is only reasonable to expect that the benefits of implementation will exceed the costs incurred. Economic considerations also consider the economic impact on the community's future development.

3.6.1.11 **Environmental:** Environmental criteria have become an important consideration in examining mitigation options. Although most mitigation measures are usually beneficial for the environment, some measures may have adverse effects, which must be considered and addressed.

Based on STAPLEE, the Local Advisory Task Force addressed the following questions to determine mitigation options:

Does the Action:

1. Solve the problem? 2. Address Vulnerability Assessment? 3. Reduce the exposure or vulnerability to the highest priority hazard?	4. Address multiple hazards? 5. Address more than one (1) Goal/Objective? 6. Benefits equal or exceed costs?

Can the Action:

1. Be implemented with existing funds? 2. Be implemented by existing state or federal grant programs?	3. Be completed within the 5-year life cycle of the LHMP? 4. Be implemented with currently available technologies?

Will the Action:

1. Be accepted by the community? 2. Be supported by community leaders? 3. Adversely impact segments of the population or neighborhoods? 4. Require a change in local ordinances or zoning laws?	5. Result in legal action such as a lawsuit? 6. Positively or negatively impact the environment? 7. Comply with all local, state and federal environmental laws and regulations?

Is there:

1. Sufficient staffing to undertake the project?	2. Existing authority to undertake the project?

3.7 Draft the Hazard Mitigation Plan

The Local Hazard Mitigation Plan Update was drafted by the Project Manager, based on input and comments provided by the Planning Team. The Planning Team used the 2012 LHMP as a starting point but revised it to reflect updated information and the new Table of Contents (TOC). The proposed TOC is closely related to the 2012 LHMP format. The Planning Team also used the FEMA Guidance and materials provided by the County Fire Department Office of Emergency Services. This material aided in the Planning Team's understanding of the level of detail and type of information that is provided in each section.

This process started with the City Departments providing information to the Planning Team through their liaison on the Planning Team. The Planning Team then worked together to produce the draft LHMP. Each section was reviewed and updated as necessary, and the entire LHMP was reviewed by the members of the Planning Team, which was coordinated by the Planning Team Project Manager.

3.8 Adopt the Plan

The Local Hazard Mitigation Plan will be submitted for courtesy review to Dynamic Planning, a hired contractor for the San Bernardino County Fire Department Office of Emergency Services (OES). Additional revisions will be made based on recommendations by Dynamic Planning. The plan will then be formally submitted to the California Emergency Management Agency (Cal FEMA) and the Federal Emergency Management Agency (FEMA) for final review and approval. FEMA will provide the City with an "Approval Pending Adoption" letter if the plan update meets all federal

requirements. Upon receipt of this letter, the final plan will be submitted to the Fontana City Council for consideration and adoption.

The City of Fontana City Council is responsible for the review, approval, and adoption of the Local Hazard Mitigation Plan (LHMP) update for the City of Fontana. It is also the intent of the City of Fontana City Council to ensure the LHMP update remains a part of the City of Fontana General Plan.

After Cal OES and Cal FEMA have approved the LHMP update, it will be adopted by the City of Fontana City Council through a public hearing process. The LHMP will be listed on the agenda with the plan being made available electronically to the general public for at least three (3) business days prior to the City Council's meeting date. Any member of the public can make comments on the Plan during the meeting prior to any action by the City Council. ***This section will be completed after approval by Cal OES and FEMA.***

Section 4. Risk Assessment

The risk assessment is the process of measuring the potential impact to life, property and economic impacts resulting from natural hazards. The intent of the Risk Assessment is to identify, as much as practicable given existing/available data, the qualitative and quantitative vulnerabilities of a community. The results of the risk assessment allow for a better understanding of the impacts of natural hazards to the community and provides a foundation in which to develop and prioritize mitigation actions to reduce damage from natural disasters through increased preparedness and response times and the better allocation of resources to areas of greatest vulnerability.

This Risk Assessment Section evaluates the potential loss from a hazard event by assessing the vulnerability of buildings, infrastructure, and people. It identifies the characteristics and potential consequences of hazards, how much of the unincorporated areas of the County could be affected by a hazard, and the impact on unincorporated County area assets. The Risk Assessment approach consists of three (3) components:

- Hazard Identification – Identification and screening of hazards (Section 4.1)
- Hazard Profiles – Review of historic occurrences and assessment of the potential for future events (Section 4.2)
- Vulnerability Assessment – Determination of potential losses or impacts to buildings, infrastructure and population (Section 4.3)

4.1 Hazard Identification

Per FEMA Guidance, the first step in developing the Risk Assessment is identifying the hazards, which was completed by the Local Advisory Task Force. The Hazard identification is the process of recognizing natural and human-caused events that threaten an area. Natural hazards result from unexpected or uncontrollable natural events of sufficient magnitude to cause damage. Even though a particular hazard may not have occurred in recent history in the study area, all hazards that may potentially affect the study area have been considered. Hazards were ranked as low, medium or high based upon the perceived threat to the City. A threat category of low designates hazards unlikely to occur. A hazard in the medium category has some likelihood of occurrence but does not pose a significant threat to the community. A designation of high is assigned to hazards when a significant threat is identified.

4.1.1 Hazard Screening Criteria

The initial threat assessment of each hazard is based upon the following sources:

1. Historic occurrence of the hazard – Assessment is based on frequency, magnitude and potential impact of the hazard.
2. Mitigation potential for the hazard – This criterion considers if there are mitigation or counter measures possible to prevent or alleviate the risk. For example, although the south end of Fontana is located beneath the landing path of the Ontario International Airport (ONT) and there are significant concerns over an airplane crash, an airplane crash is not the sort of hazard for which mitigation plans have proved successful.

3. Expert opinion – Evaluation of threats includes a literature review and the expertise of the Local Advisory Task Force.
4. Published data and information – Assessment is based on data and/or information from credible publications or websites (for example; U.S. Geological Survey, California Geological Survey, National Weather Services, or academic publication).

Rankings used for the hazard screening follows:

High – There may or may not have been historic occurrences of the hazard in the community or region but experts feel it is likely the hazard will occur in the community and the risk is significant. Citizens feel there is a likelihood of occurrence and the consequences will be significant in terms of building damage and loss of life.

Medium – There may or may not have been a historic occurrence of the hazard in the community or region but experts feel it is possible the hazard could occur in the community. Citizens may feel there is a likelihood of occurrence but the consequences will be negligible in terms of building damage and loss of life.

Low – There has been no historic occurrences of the hazard in the community or region and experts feel it is highly unlikely the hazard will occur in the community. The citizens agree.

4.1.2 Hazard Assessment Matrix

The results of the screening process are presented as a hazard assessment matrix in Table 4-1 below. The matrix illustrates the nature and potential of threats from natural and human-caused disasters to the City of Fontana. The Local Advisory Task Force developed the preliminary matrix, which was reviewed and modified through a series of meetings. As a part of the screening process, the Task Force developed a series of hazard maps from publicly available sources. (See Appendix E for hazard screening maps and sources).

	Hazard	Historic Occurrence	Mitigation Potential	High	Medium	Low
1	Earthquake	Yes	Yes	X		
2	Wildfire	Yes	Yes	X		
3	Flood / Winter Storms	Yes	Yes	X		
4	Terrorism	No	Yes		X	
5	Wind Surge	Yes	Yes	X		
6	Climate Change-Drought	Yes	Yes		X	
7	Landslide	No	Yes			X

Table 4-1: Hazard Assessment Matrix

This section provides an explanation of the final rankings presented in the matrix and, where applicable, identifies the use of maps used during the ranking process.

1. **Flood / Winter Storm** ranked high. Winter storm flooding occurs in the city occasionally, but with little or no consequence to property or human life. Appendix E Map 2, shows the delineated flood zone in the region and demonstrates that it falls outside the city boundary.

2. **Wildfire** ranked high. The City is surrounded by foothills that have steep terrain and light, flashy fuels, and the predominate weather patterns feature high temperatures, low humidity, as well as seasonal high speed Santa Ana winds. These factors together, with many homes that are built near or in the interface zone, have created a potential for significant damage due to wildfire.

3. **Earthquake** ranked high. Earthquake hazard maps and the history of large, damaging earthquakes in the Southern California region, indicate high risk for the City of Fontana. Appendix E – Map 1 shows the Cucamonga, San Andreas, and San Jacinto fault zones intersecting the city. Appendix E – Maps 7, 8, and 9 show landslide and liquefaction susceptibility.

4. **Landslide –** ranked low, however is dependent on other factors including earthquake, wildfire, and flooding. These other identified hazards have a direct link to the vulnerability and creation of landslides which could significantly change the rating factor.

5. **Climate Change/Drought-**ranked medium. Fontana will potentially be affected not only by direct climate change impacts within its own borders, but by indirect impacts resulting from changes taking place in the mountains, the deserts, and the coast. The major projected impact of climate change in Fontana is expected to be more days of extreme heat over longer periods. Drought severity depends on numerous factors, including duration, intensity, and geographic extent, as well as regional water supply demands by humans and vegetation.

6. **Terrorism** ranked medium. Due to the proximity of the Ontario International Airport and several other potential priority targets of terrorists, the project team ranked this factor as a medium threat.

7. **Wind Surge** ranked high. Historical data shows that many damaging wind events have been documented in the Inland Empire area and in Southern California as a whole.

4.1.3 Hazard Prioritization

The Local Advisory Task Force approach combines historical data, local knowledge, and consensus opinions to produce numerical values that allow identified hazards to be ranked against one another. These criteria are used to evaluate hazards and identify the highest risk hazard in the City of Fontana. As shown in Table 4-1.2 , there are four hazards that were given a high threat rating: flood/winter storm, earthquake, wildfire, and wind surge. Two hazards were identified as a medium threat rating: climate change/drought and terrorism, and landslides was ranked low as a threat to the City of Fontana.

4.2 Hazard Profiles

The natural hazard profiles in this section provide a baseline definition and description in relation to the City. The hazards symbolized below are profiled individually in this section and are in order by priority. For reference, each hazard symbol is placed at the beginning of each profile. The hazard profiles in this section provide a baseline for the Vulnerability Assessment, where the vulnerability is quantified in terms of population and assets affected for each of the priority hazards.



FLOOD



CLIMATE CHANGE
DROUGHT



FIRE



EARTHQUAKE



LANDSLIDE



TERRORISM

4.3 Flood Hazard Profile



Floods are the second most common and widespread of all natural disasters faced by the region and cities like City of Fontana. Most communities in the United States have experienced some kind of flooding during or after spring rains, heavy thunderstorms, winter snow thaws, or summer thunderstorms.

A flood, as defined by FEMA's National Flood Insurance Program (NFIP) is: "A general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties (at least one of which is the policyholder's property) from:

- Overflow of inland or tidal waters, or
- Unusual and rapid accumulation or runoff of surface waters from any source, or
- Mudflow, or
- Collapse or subsidence of land along the shore of a lake or similar body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels."

Floods can be slow or fast rising but generally develop over a period of hours or days. Mitigation includes any activities that prevent an emergency, reduce the chance of an emergency happening, or lessen the damaging effects of unavoidable emergencies. Investing in mitigation measures now, engaging in floodplain management activities, constructing barriers such as levees, and purchasing flood insurance will help reduce the amount of structural damage and financial loss from other types of property damage should a flood or flash flood occur.

The standard for flooding is the 1% annual chance flood, commonly called the 100-year flood, the benchmark used by the FEMA to establish a standard of flood control in communities throughout the country. The 1% annual chance flood is also referred to as the base flood.

The 1% annual chance flood is the flood that has a 1% chance of being equaled or exceeded in any given year and it could occur more than once in a relatively short period of time. By comparison, the 10% flood (10-year flood) means that there is a 10% chance for a flood of its size to occur in any given year.

4.3.1 Regulatory Environment

National Flood Insurance Act and Flood Disaster Protection Act

The Federal Emergency Management Agency (FEMA) is mandated by the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 to evaluate flood hazards and provide Flood Insurance Rate Maps (FIRMs) for local and regional planners to promote sound land use and floodplain development. The Flood Disaster Protection Act requires owners of all structures in identified Special Flood Hazard Areas to purchase and maintain flood insurance as a condition of receiving Federal or federally related financial assistance, such as mortgage loans from federally insured lending institutions. The National Flood Insurance Reform Act of 1994 further strengthened the National Flood Insurance Program (NFIP) by providing a grant program

for State and community flood mitigation projects. The act also established a system (Community Rating System - CRS) for crediting communities that implement measures to protect the natural and beneficial functions of their floodplains, as well as managing the erosion hazard. The City of Fontana has participated in the NFIP since 1987 (City ID No. – 060274); however, Fontana is not currently listed in FEMA's CRS of cities.

How can the City minimize the damage caused by flooding?

The city of Fontana sits primarily on alluvial sediments shed from the San Gabriel and Jurupa Mountains, and carried downslope onto the valley floor by a series of ephemeral streams, including Duncan, San Sevaine, Morse, and Henderson Creeks, and several smaller unnamed streams. Any rainwater that does not infiltrate the valley sediments makes its way as runoff into the East Etiwanda Creek Channel or the Etiwanda – San Sevaine Channel. Except for the Santa Ana River, most of the streams in the valley have significant flow only during the wet winter months, when they may carry large amounts of runoff for short periods of time. Average yearly precipitation in the Fontana area is 26.6 inches. However, rainfall is extremely variable from year to year.

The city of Fontana is not vulnerable to flooding associated with the Santa Ana River and its larger tributaries. However, the smaller channels and alluvial fans within or immediately adjacent to the city do pose a flooding potential. The most current flood maps prepared by FEMA show that several sections in the study area are subject to 100- and 500-year flooding. Several existing critical facilities are situated within these flood boundaries, as well as numerous hazardous materials sites.

The City has undertaken a significant capital improvement program that includes the construction and retrofitting of storm drains and other flood control structures throughout the area. These structures are anticipated to reduce the flood boundaries as presently shown on the FIRM maps. Once documentation has been submitted to and has been reviewed by FEMA, new FIRM maps for this area will be issued. This area has not seen a 100-year flood in many years, the smaller 10-year and 25-year storms that have occurred did strain the area's flood control system. To compound this, the area has experienced tremendous growth in the last few years, and many more developments are currently in the construction or design phases. These projects will increase the amount of impervious surface area and place more people and structures within the floodplain, with a resultant increase in the flood risk.

There is no major dam located upstream from the Fontana area, therefore, the city is currently not susceptible to dam inundation. However, other smaller flood control improvements, such as canals, culverts, levees, and retention basins may crack and suffer some structural damage during an earthquake, especially in areas prone to ground failure.

4.3.1.1 National Flood Insurance Program (NFIP)

The NFIP makes federally backed flood insurance available to homeowners, renters, and business owners in participating communities. As a participating member of the NFIP, City of Fontana is dedicated to protecting more than 434 homes with policies currently in force. Like most communities participating in NFIP, FEMA has prepared a detailed Flood Insurance Study (FIS) for areas of San Bernardino County, including the City of Fontana. The study presents water surface elevations for floods of various magnitudes, including the 1-percent annual chance

of flood (the 100-year flood) and the 0.2-percent annual chance of flood (the 500-year flood). Base flood elevations and the boundaries of the 100- and 500-year floodplains are shown on FIRMs. More information on location and geographic extent of the Flood Insurance Rate Maps (FIRMs) are provided in this section.

The City of Fontana entered the regular phase of the NFIP on June 2, 1974. As a participant in the NFIP, the City of Fontana is dedicated to regulating development in the FEMA planned floodplain areas in accordance with NFIP criteria. Before a permit to build in a floodplain area is issued, the City of Fontana ensures that two basic criteria are met:

- All new buildings and developments undergoing substantial improvements must, at a minimum, be elevated to protect against damage by the 100-year flood.
- New floodplain developments must not aggravate existing flood problems or increase damage to other properties.

Structures permitted or built in the County/City before the NFIP regulatory requirements were incorporated into the City of Fontana ordinances (before the effective date of the City of Fontana's FIRM) are called "pre-FIRM" structures. For the City of Fontana, pre-FIRM structures are those permitted or built before June 2, 1974.

Extensive FEMA NFIP databases are used to track claims for every participating community including City of Fontana. NFIP insurance data provided by FEMA indicates that as of September 2, 2016, there were 434 policies in the City of Fontana, resulting in $109,977,600 of insurance in force; this amounts to $406,842 in total premiums. Of the 434 policies, only 317 are for structures located within the 1% annual chance flood zones, while the remaining 117 policies are for structures located outside of the FEMA identified floodplain.

There have been 20 closed paid losses totaling $127,426. Of the closed 20 paid losses there has been (1) one substantial damage claim. Substantial damage" means damage of any origin sustained by a structure whereby the cost of restoring the structure to it's before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

Based on this analysis of insurance coverage, the City of Fontana has significant assets at risk to the 100-year flood. Of the 573 improved parcels within the 100-year floodplain, only 409 of those parcels maintain flood insurance[1]. These uninsured structures located in mapped floodplain areas are especially vulnerable.

Currently, the City of Fontana contains (1) one RL property under their jurisdictional umbrella. The total dollar amount of claims paid to date by the NFIP is $127,426. The City of Fontana also contains 0 Severe Repetitive Loss structure.

Most of the RL properties that have experienced flooding in of the City of Fontana are due to overbank flooding in localized areas. Every loss claim is seasonal in nature as all loss claims have been in December, January or February. Some mitigation on these properties has been

[1] An improved property owner may not carry flood insurance for a number of reasons; not everyone is required to carry flood insurance. Structures carrying federally-backed mortgages that are in a SFHA are required to carry flood insurance in the City of Fontana. Owners who have completed the terms of the mortgage or who purchased their property outright may not choose to carry flood insurance and instead bear the costs of recovery on their own.

conducted and the City of Fontana is currently tracking mitigation actions through standardized forms as required by FEMA. Of the (1) repetitive loss properties, all have been mitigated.

A property does not have to be currently carrying a flood insurance policy to be considered a RL or SRL property. Often homes in communities are not carrying flood insurance but are still on the community's repetitive loss list. The "repetitive loss" designation follows a property from owner to owner; from insurance policy to no insurance policy, and even after the property has been mitigated. Having an insurance policy and making claims that fall into the repetitive loss criteria will put a property on the RL list. Even after the policy on a property has lapsed or been terminated, the property will remain on City of Fontana's RL list.

The Privacy Act of 1974 (5 U.S.C. 522a) restricts the release of certain types of data to the public. Flood insurance policy and claims data are included in the list of restricted information. FEMA can only release such data to state and local governments, and only if the data are used for floodplain management, mitigation, or research purposes. Therefore, this plan does not identify the repetitive loss properties or include claims data for any individual property.

4.3.2 Past Flood Occurrences

- 1969 Fontana Area Flood – The mountain tributaries of Cucamonga, Deer, Day and Cajon Creeks damaged or destroyed, as a result of scour or erosion, several miles of improved channels, roads, bridges and railroad lines. The 1969 floods exceeded the capacity of the storm drains and flood-control channels, overflowing onto residential areas. About 1,000 people were reportedly evacuated from the Cucamonga area.
- March 30, 1983 Fontana Flood – The President declared San Bernardino County a federal disaster area for public agencies as a result of the storms between January 21, 1983 and March 30, 1983. The City of Fontana incurred damage to public improvements during this time period. City Council Resolution number is 83-76. All other information is unknown.
- February 28, 1993 – The President declared San Bernardino County a federal disaster area for public agencies as a result of the storms between December 28, 1992 and February 28, 1993 (FEMA-979-DR). The City of Fontana incurred damage to public improvements during this time period. City Council Resolution number is 93-90. All other information is unknown.
- January 1, 1995 – The President declared San Bernardino County a federal disaster area for public agencies as a result of storm related flood damage occurred in January 1995 (FEMA-1044-DR). The City of Fontana incurred damage. City Council Resolution number is 95-29. All other information is unknown.
- February 28, 1995 – The President declared San Bernardino County a federal disaster are for public agencies as a result of storm related flood damage occurred in February – March, 1995 (FEMA-1046-DR). The City of Fontana incurred damage. City Council Resolution number is 95-30. All other information is unknown.
- October 19 – 20, 2004 – The City of Fontana received heavy rain fall resulting in heavy urban flooding. The San Sevaine wash was completely overrun at the Railroad undercrossing just north of Slover Avenue. The resulting flooding waters washed out the train tracks, causing a railcar full of chlorine to derail and puncture a jet fuel gas line underground adjacent to the tracks.
- December 31, 2004 – At 1:25 pm the Fire Department/Rescue Squad declared that Etiwanda Avenue had to be closed due to flash flooding. There were no deaths or injuries reported.

- January 9, 2005 – At 11:52 am law enforcement declared that the roadway at Sierra Avenue and Armstrong Road was completely flooded due to a flash flood. There were no deaths or injuries reported.
- January 19, 2010 – Heavy rain caused minor flooding in areas with poor drainage in Fontana and Redlands. In Fontana, a home was filled with several inches of water after sandbags surrounding the home failed. In Redlands, a clogged drain caused an apartment parking lot to flood, damaging several cars.
- October 11, 2012 – A warehouse roof collapsed on the 11000 block of Mulberry Avenue in Fontana due to accumulation of over 1 foot of water. Drains were plugged allowing the water to accumulate. An alert gauge approximately 2 miles north of the location reported 1.02 inches of rain in 25 minutes between 1545 and 1610 PST.

4.3.3 Location/ Geographic Extent

The Federal Flood Emergency Management Agency (FEMA) updates the Flood Insurance Rate Maps (FIRM) which are utilized and identify areas of concern for potential flooding. For the City of Fontana, FEMA updated the FIRM Maps based on the significant storm drain and flood control infrastructure built in the area within the last decade.

The process of updating the FEMA FIRM Maps required coordination with city and county staff to determine areas of potential flooding. Areas lacking infrastructure are reviewed for flooding potential in infrastructures identified. In the last 10 years, the City of Fontana and the San Bernardino County Flood Control District has constructed facilities within the City which have substantially alleviated food potential.

Additionally, scattered areas throughout the City may exist with minor vulnerability to flooding. However, the local flooding has been minimized in the City of Fontana due to recent infrastructure built in combination with the 210 Freeway construction (Highland Channel) thereby minimizing flood potential.

In urban areas, flood problems are intensified because new homes and other structures, and new streets, driveways, parking lots, and other paved areas decrease the amount of open land available to absorb rainfall and runoff, thus increasing the volume of water that must be carried away by waterways.

Flash flooding tends to occur in the summer and early fall because of the monsoon rains and is typified by increased humidity and high summer temperatures.

The FIRM maps not only identify the flood hazard zones for insurance and floodplain management purposes, but also provide a statement of probability of future occurrence.

A 500-year flood has a 0.2-percent chance of occurring in any given year; a 100-year flood has a 1-percent chance, a 50-year flood has a 2-percent chance, and a 10-year flood has a 10-percent chance of occurrence. Although the recurrence interval represents the long-term average period between floods of specific magnitude, significant floods could occur at shorter intervals or even within the same year. The FIRM maps typically identify components of the 500-year and 100-year floodplains.

Figure 4-1 shows 100-year and 500-year floodplain zones, which are estimated inundation areas based on a flood that has a 1-percent (100-year) and 2-percent (500-year) chance of occurring in any given year. City of Fontana contains over 3,000 acres of identified flood hazard areas. Table 4-2 provides the total area for both the 100-year and 500-yr. flood hazard areas.

A majority of the flood risk within City of Fontana is specifically subject to inundation as a result of heavy rainfall and resulting stream and drainage canal overflows. The extent of flooding associated with a 1-percent annual probability of occurrence (the base flood or 100-year flood) is used as the regulatory boundary by many agencies, and helps identify the location and extent of flooding in areas across the City of Fontana. This area is also referred to as the SFHA, and is a convenient tool for assessing vulnerability and risk in flood-prone communities.

Figure 4-1 shows 100-year and 500-year floodplain zones, which are estimated inundation areas based on a flood that has a 1-percent (100-year) and 2-percent (500-year) chance of occurring in any given year. City of Fontana contains over 3,000 acres of identified flood hazard areas. Table 4-2 provides the total area for both the 100-year and 500-yr. flood hazard areas.

Flood Hazard Type	Sum of Acres	Sum of Square Miles
100-Year Flood	320	0.50
100-Year, Floodway	25	0.04
500-Year Flood	1,779	2.78
500-Year, Protected by Levee	1,059	2
Total	**3,183**	**4.97**

Table 4-2: Special Flood Hazard Area

Source: FEMA Published DFIRM Data

4.3.4 Magnitude/ Severity

In urban areas like City of Fontana, flood problems are intensified because new homes and other structures, and new streets, driveways, parking lots, and other paved areas decrease the amount of open land available to absorb rainfall and runoff, thus increasing the volume of water that must be carried away by waterways.

4.3.4.1.1 Flash Flooding (From San Bernardino County Operational Area Plan)

Flash flooding tends to occur in the summer and early fall because of the monsoon rains and is typified by increased humidity and high summer temperatures.

The desert area contains many mountain ranges that are steep and experience summer thunder storms causing flash floods in many dry washes on the desert floor. The water collects in dry lake beds throughout the desert area. Environmental permit processing has delayed or prohibited work in the washes to provide flow lines to many bridges on county highways. Many highways do not have bridges but convey water across the road with dip crossings. Flash flooding cause's road

and bridge wash outs and erosion of earthen channels and basins when they occur near these facilities. Cities and towns often experience street closures for several days due to sediment transport and road damage. Because of the sheet flow character of the desert, many private properties experience erosion and sediment deposits. The urban valley also can experience flash flooding in its narrow canyons and within the many unimproved creeks and interim channels feeding the Santa Ana River. The valley floor in many areas is very flat so even minor rain events can produce flooding of roads and private property. In coordination with local jurisdictions, the County of San Bernardino Flood Control District has prepared Master Drainage plans for many cities and towns to provide a plan for reducing flooding due to minor storms. Maps can be found on the County's Department of Public Works website here:

http://cms.sbcounty.gov/dpw/FloodControl/Planning/MPD.aspx

However, local resources are not sufficient to cover the cost of the construction of the drainage systems. The densely populated (75% of the county population) urban valley region contains the headwaters of the Santa Ana River. The San Gabriel and San Bernardino Mountains border the North side of the valley are steep reaching 5,000 feet with alluvial fans which are developed and densely populated.

4.3.5 Frequency/ Probability of Future Occurrences

The FIRM maps not only identify the flood hazard zones for insurance and floodplain management purposes, but also provide a statement of probability of future occurrence.

A 500-year flood has a 0.2-percent chance of occurring in any given year; a 100-year flood has a 1-percent chance, a 50-year flood has a 2-percent chance, and a 10-year flood has a 10-percent chance of occurrence. Although the recurrence interval represents the long-term average period between floods of specific magnitude, significant floods could occur at shorter intervals or even within the same year. The FIRM maps typically identify components of the 500-year and 100-year floodplains.

Figure 4-1 shows FEMA 100-year and 500-year flood zones.

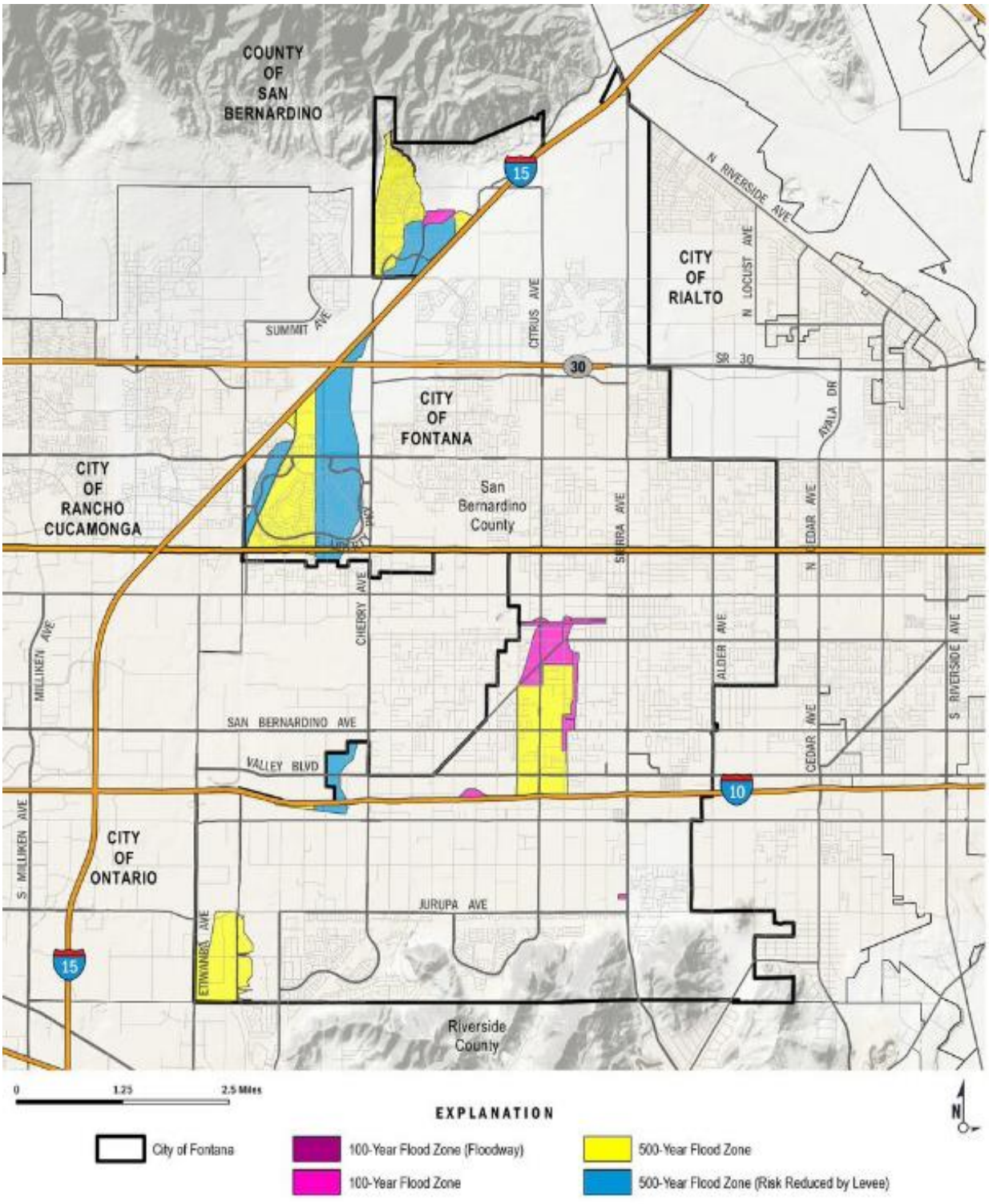


Figure 4-1: Flood Hazard Map

Source: FEMA

4.3.6 Flooding due to Dam Inundation

Dams or reservoirs may fail for seismic or geologic reasons, which could potentially lead to damage of infrastructure and property located immediately and downstream from these dams and reservoirs. Inundation areas for the City of Fontana and nearby jurisdictions as provided by the San Bernardino County Land Use Services map are shown in Figure 4-2. The map identifies some areas of dam inundation within adjacent jurisdictions; however none exist within the jurisdiction or upstream from the City of Fontana. Therefore, no potential for dam inundation exists.

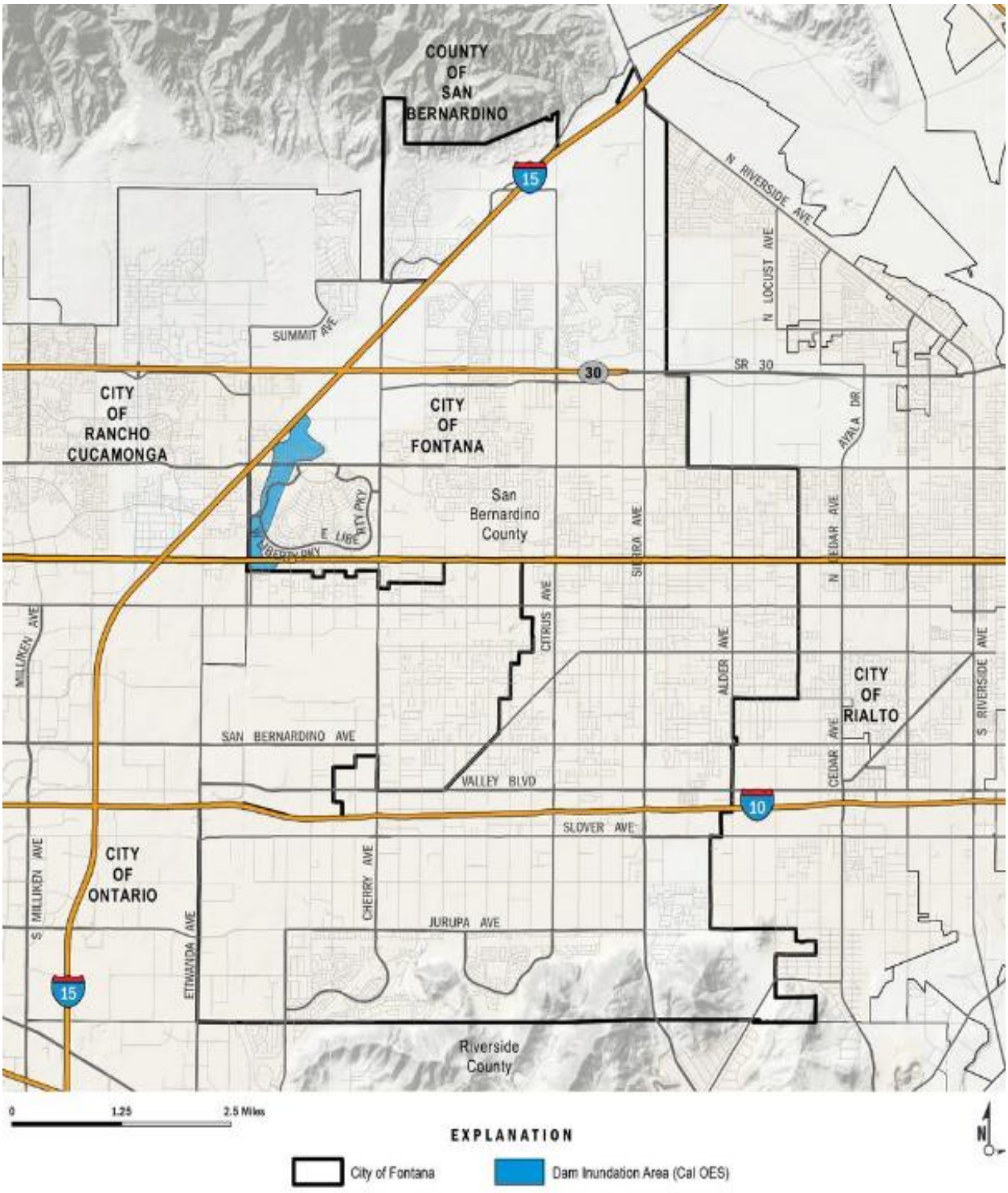


Figure 4-2: Dam Inundation Areas in Fontana

Source: Cal OES

4.4 Wildfire Hazard Profile



As defined in the California Fire Protection (CAL FIRE) 2010 Strategic Fire Plan, a wildfire event is an unwanted wildland fire including unauthorized human-caused fires, escaped wildfire use events, escaped prescribed wildfire projects, and all other wildfires.

A wildfire [or "wildland" fire] is a type of fire that spreads through open land, burning all types of vegetation and threatening buildings and structures. It often begins unnoticed, spreads quickly, and is usually signaled by dense smoke that may be visible from miles around. Wildfires can be caused by human activities (such as arson or campfires) or by natural events, such as lightning. Wildfires often occur in undeveloped forests, grasslands or other such areas with ample vegetation and spread to developed areas, threatening life, safety, and property. If wildfires are not promptly controlled, they may quickly grow into a small or large-scale disaster. Even small fires can threaten lives and resources and destroy improved properties. The indirect effects of wildfires to the citizens and businesses in the City can also be catastrophic.

Wildfire Behavior

The following three factors contribute significantly to wildfire behavior and can be used to identify fire hazard areas:

1. ***Topography****:* As slope increases, the rate of wildfire spread typically increases. South facing and west facing slopes are also subject to more solar radiation, making the vegetation drier and thereby intensifying wildfire behavior. These and other certain features, such as a depression in ridgeline (called a "saddle") a narrow canyon enclosed on three sides (called a "chimney") in the topography of the foothills surrounding Fontana create a special hazard in that they can increase the intensity and the unpredictability of wildfires.

2. ***Fuel:*** The type and condition of vegetation plays a significant role in the occurrence and spread of wildfires. Certain types of plants are more susceptible to burning or will burn with greater intensity. For example, the open space areas within and surrounding Fontana contain fuels that range from light grasses which can flash quickly in a wildfire scenario, to some moderate to thick brush and trees that feed a fire in the treetops (called an "aerial" fire.) Dense or overgrown vegetation increases the amount of combustible material available to fuel the fire (referred to as the "fuel load"). The ratio of living to dead plant matter is also important. The risk of fire is increased significantly during periods of prolonged drought as the moisture content of both living and dead plant matter decreases. Lastly, the fuel's continuity, both horizontally and vertically, is also an important factor.

3. ***Weather:*** The most variable and often most profound factor affecting wildfire behavior is weather. Temperature, relative humidity, wind, and lightning can affect chances for ignition and spread of fire. The City of Fontana has experienced extreme weather, such as high winds, high temperatures and low humidity, which can and has led to extremely volatile and dangerous wildfire activity. By contrast, cooling and higher humidity often signals reduced wildfire occurrence and easier containment.

The above factors make up a "Fire Behavioral Triangle" that is illustrated in Figure 4-3. The frequency and complexity of wildfires is also dependent upon other factors, such as lightning, drought, and infestations (such as the recent Bark Beetle infestation in the San Bernardino National Forest).



Figure 4-3: Fire Behavior Triangle

4.4.1 Regulatory Environment

Wildfire regulatory requirements are mandated by the State of California and the City of Fontana.

Fire Regulations

Assembly Bill 337 (the Bates Bill, adopted September 29, 1992) was a direct result of the great loss of lives and homes in the Oakland Hills "Tunnel Fire" of 1991. The Bates Bill Process is used to identify Very High Fire Hazard Severity Zones in Local Responsibility Areas. **Government Code Section 51178** specifies that the Director of the California Department of Forestry (CDF), in cooperation with local fire authorities, shall identify areas that are Very High Fire Hazard Severity Zones (VHFHSZs) in Local Responsibility areas (LRAs), based on consistent statewide criteria and the expected severity of fire hazard. State Responsibility Areas (SRAs) include all lands regardless of ownership, except for cities and federal lands. Although the State has financial responsibility for SRAs, it is not the State's responsibility to provide fire protection services to any building or structure located within a wildland area, unless the CDF has entered into a cooperative agreement with a local agency for those purposes pursuant to **Public Resources Code Section 4142**. Under **Assembly Bill 3819**, passed in 1994 (AB 3819 – Willie Brown), "Class A" roofing, minimum clearances of 30 feet around structures, and other fire defense improvements are

required in VHFHSZs. Many communities require vegetation management zones far wider than 30 feet; in the designated VHFHSZ of Fontana, 300 feet is recommended.

Government Code Section 51178 states that a local agency may, at its discretion, exclude from the requirements of Section 51182 an area identified as a VHFHSZ by the CDF. This requires a finding, supported by substantial evidence, that the requirements of Section 51182 are not necessary for effective fire protection within the area. Conversely, local agencies may include areas not identified as a VHFHSZ by the CDF, following a finding that the requirements of Section 51182 are necessary for effective fire protection. According to **Section 51182**, such changes made by a local agency shall be final and cannot be rebutted by the CDF.

Wildland areas require disclosure for real-estate transactions. Specifically, Assembly Bill 6 (AB6) requires that both types of fire hazard areas (SRAs and VHFHSZs) be disclosed in real estate transactions. **Civil Code Section 1103(c) (6)** also requires real estate sellers to inform prospective buyers whether or not a property is located within a wildland area that could contain substantial fire risks and hazards.

Public Resources Code Section 4290 requires minimum statewide fire safety standards pertaining to:

- Road standards for fire equipment access;
- Standards for signs identifying streets, roads, and buildings;
- Minimum private water supply reserves for emergency fire use; and
- Fuel breaks and greenbelts.

Wildland fire areas are also subject to **Public Resources Code Sections 4291 through 4299**, which require property owners in such areas to conduct maintenance in order to reduce the fire danger.

The **California Emergency Services Act, Section 8568**, states that "the State Emergency Plan shall be in effect in each political subdivision of the State, and the governing body of each political subdivision shall take such action as may be necessary to carry out the provision thereof." The act provides the basic authorities for conducting emergency operations following the proclamations of emergencies by the Governor or appropriate local authority, such as a City Manager.

The City of Fontana uses the California Fire Code with amendments and several other fire ordinances to further reduce the City's vulnerability to structural and wildland fires. For example, since 1986, fire sprinklers and smoke detectors have been required for all new homes in Fontana.

Mitigation Efforts

Many major vegetation fires have occurred historically in the Fontana area; some of these destroyed homes and other structures. These fires have occurred mostly in the northwesterly area of the city, but a few fires have also occurred in the Jurupa Mountains. In fact, the fire history indicates that a major fire occurs approximately once every ten years in the area. In all fires where structures were lost, the structures were unprotected buildings without fire sprinklers and without vegetation management zones around them.

The northwestern corner of the city has high hazard chaparral vegetation and steep slopes. This area is also subject to high, hot Santa Ana (or Santana) winds that blow from the north-northeast down the Cajon Pass. Fire models indicate that a fire in this area can have a major impact on the fire-fighting forces in Fontana and neighboring communities. The Jurupa Mountains, located in the southern portion of Fontana, have high grasses and locally steep slopes. A major fire in this area also has the potential to tax the fire forces of Fontana and adjacent communities, and to result in major traffic congestion as residents attempt to evacuate while onlookers try to enter the area. In addition to the two areas identified above, flat, grassy vacant properties in the city are also susceptible to vegetation fires.

Most structural fires occur in residences, and most fatalities in fires occur in residences. Residential developments located next to high fire hazard areas are at high risk of being impacted by fire, especially if the structures are not properly protected and there is inadequate vegetation management. Since 1986 all new homes in Fontana have been equipped with fire sprinkler systems and smoke detectors, and homes constructed since 1980 have proven to withstand fires better than older homes. In the older, low-income residential neighborhoods, however, structural fire is a concern because the houses are not protected with sprinklers, the buildings are often in a state of disrepair, and it is not uncommon for multiple families, or several unrelated persons to share a home together. An analysis of historical fires in the Fontana area indicates that the city's risk to structural fire can be classified as low probability / high consequence.

Similar comments can be made about the older commercial facilities in the city. These are also lack fire sprinklers, and where several buildings adjoin each other, there is the potential for a multi-occupancy fire that could destroy several buildings due to lack of fire separations. Older portions of the Kaiser
Permanente Hospital and associated buildings are not fitted with sprinklers. Given the large patient population, many of them non-ambulatory, a fire in the hospital can be considered the worst-case scenario for a structural fire in the city, with the potential for major loss of life. Structural fires in several of the large industrial facilities in the city are a concern, especially in facilities that use or store hazardous materials.

Public water supply for fire flow in the city is reportedly adequate. The water is supplied from 20 interconnected reservoirs that feed six supply zones using 16-inch diameter water mains. In the event of an earthquake on a nearby fault, however, water lost from damaged tanks could significantly reduce the water resources available to suppress earthquake-induced fires. Damaged tanks and water mains could also limit the amount of water available to residents. Furthermore, groundwater wells can be damaged during an earthquake, also limiting the water available to the community after an earthquake. Therefore, it is of paramount importance that the water storage tanks in the area retain their structural integrity during an earthquake, so water demands after an earthquake can be met. In addition to evaluating and retrofitting water reservoirs to meet current standards, this also requires that the tanks be kept at or near full capacity at all times.

4.4.1.1 State

Wildfire State Responsibility Area (SRA) Fire Safe Regulations outline basic wildland fire protection standards for local jurisdictions. SRA Fire Safe Regulations (if policed) can decrease the risk of wildfire events in the wildland interface. SRA Fire Safe Regulations do not supersede

local regulations, which equal or exceed minimum state regulations. The State statute for wildfire protection is Public Resources Code, Section 4290. Requirements in the code include information on the following (CA Fire Alliance n.d.):

1. Road Standards for Fire Equipment Access
2. Standards for Signs Identifying Streets, Roads and Buildings
3. Minimum Private Water Supply Reserves for Emergency Fire Use
4. Fuel Breaks and Greenbelts

4.4.1.2 Local

The City of Fontana is located in a Local Responsibility Area. Fire protection for the City of Fontana is the responsibility of the City of Fontana. The City of Fontana Fire Department is comprised of 33 staff members. Emergency response personnel are deployed from 7 fire stations located strategically throughout the City.

4.4.2 Past Occurrences

Wildfire events are of major concern to the City of Fontana. Cal FIRE maintains a database of wildfire perimeters. Table 4-3 gives the dates and fire names of the historical wildfires that have burned within City of Fontana limits. Figure 4-4 shows where those historical burn areas in the City of Fontana have occurred. In the past five years there have been a number of significant wildland fires that affected the City of Fontana. These fires are listed inTable 4-3, and several of the more damaging fires are discussed below.

Date	Name	Acres	Structure Loss	Personnel Assigned	Dollar Loss
Oct 2003	Grand Prix Fire	59,448	198	1,851	$14 million
Nov 2006	Sierra Fire	640	2	150	$1.2 million
Dec 2006	Citrus Fire	300	0	138	±$30,000
May 2007	Jurupa Fire	100	0	42	$18,091
Oct 2007	Cajon Fire	100	0	53	±$15,000
Oct 2008	Foxborough Fire	250	0	400	$33,190
May 2010	Glen Avon Fire	856	0	209	$232,066
August 2011	Kenwood Fire	375	0	200	N/A
June 2013	Mills Fire	534	1	282	N/A
August 2013	Cleghorn Fire	110	0	400	N/A
September 2013	Sierra Fire	200	0	397	N/A

June 2015	Sterling Fire	100	N/A	N/A	N/A
June 2015	Lake Fire	31,359	4	2,116	$32.5 million
July 2015	North Fire	4,250	23	215	N/A
August 2016	Blue Cut Fire	39,000	318	2,684	$18 million
August 2016	Pilot Fire	8,110	N/A	1,746	$16 million

Table 4-3: Wildfire Occurrences 2003-2016

The largest fire of recent date was the Blue Cut Fire, which started on August 16, 2016 at 10:36 AM in the Cajon Pass along Old Cajon Blvd. north of Kenwood Avenue west of Interstate 15. The fire quickly spotted across Cajon Creek and grew into a large wildland fire. During the course of the fire fight, railroad lines, local roads, highway 138 and Interstate 15 were closed along with a large evacuation area that included Lytle Creek, Wrightwood, Summit Valley, Baldy Mesa, Phelan and Oak Hills. The fire ravaged rural communities on the edges of vast open spaces so quickly that there was little firefighters could do. California's five-year drought, which has left brush bone-dry, as well as hot, windy weather conditions was blamed. The fire destroyed 105 homes and 213 other structures. At the peak of the fire, more than 80,000 people were ordered to evacuate. About 100 of these evacuees spent nights at Jessie Turner Community Center for Health and Fitness. Destructive wildfires like these continue to be a threat to Fontana every season.

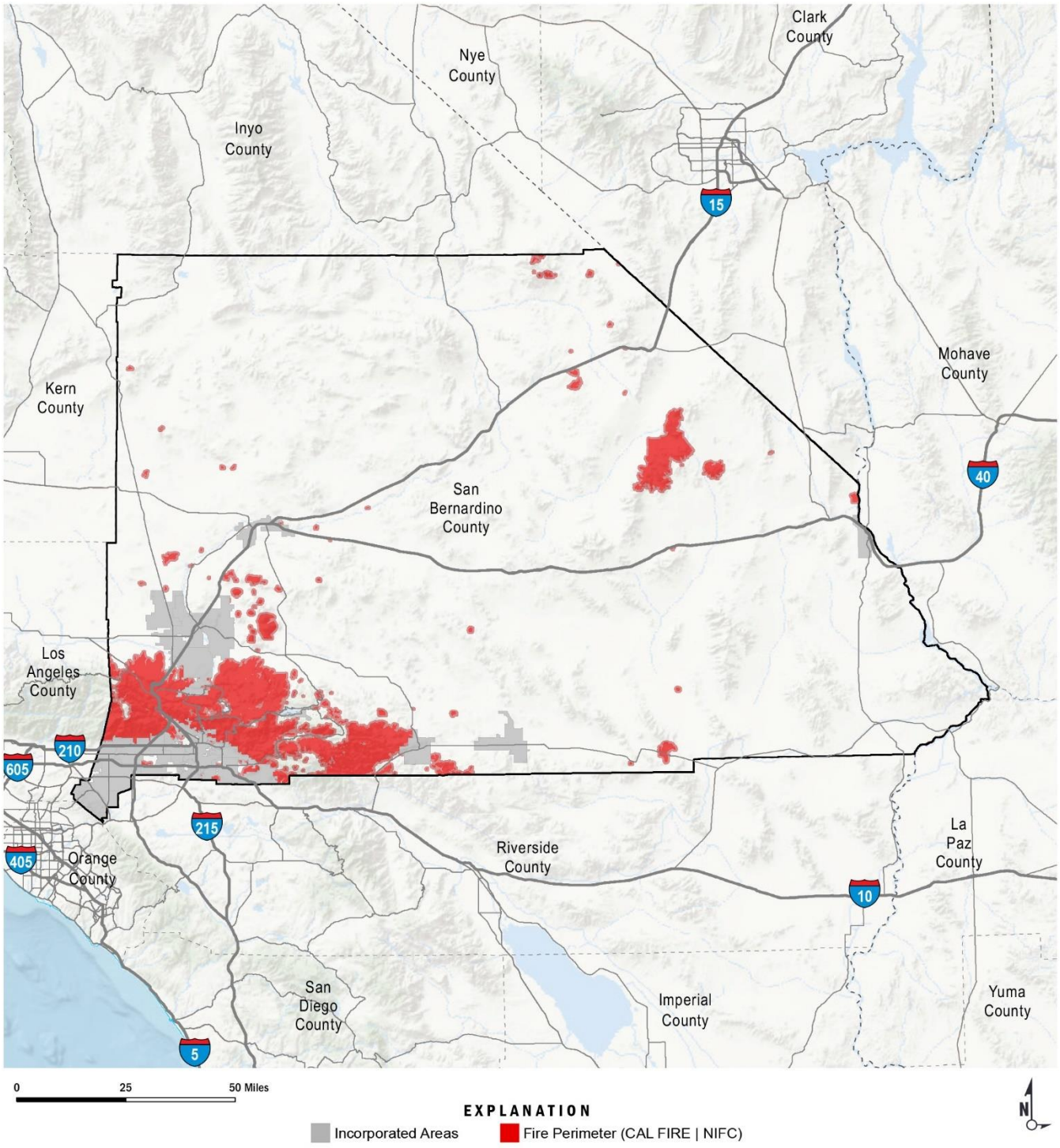


Figure 4-4: Wildfire History Map

Source: Cal Fire/ NFIC

4.4.3 Location/Geographic Extent

Using information from the California Department of Forestry (CAL FIRE) Figure 4-5 illustrates the areas at risk to a wildfire event. The areas with the highest risk of wildfire are the in the southern and northern portions of the City of Fontana. Current development of residential and commercial buildings have moved the urban wildland interface (the area where human development meets undeveloped wildland) closer to higher-risk wildfire hazard areas, increasing the number of people and buildings at risk as compared to the previously adopted LHMP. The remainder of the City of Fontana (the Central Core) is urbanized and generally built out with established commercial and residential development.

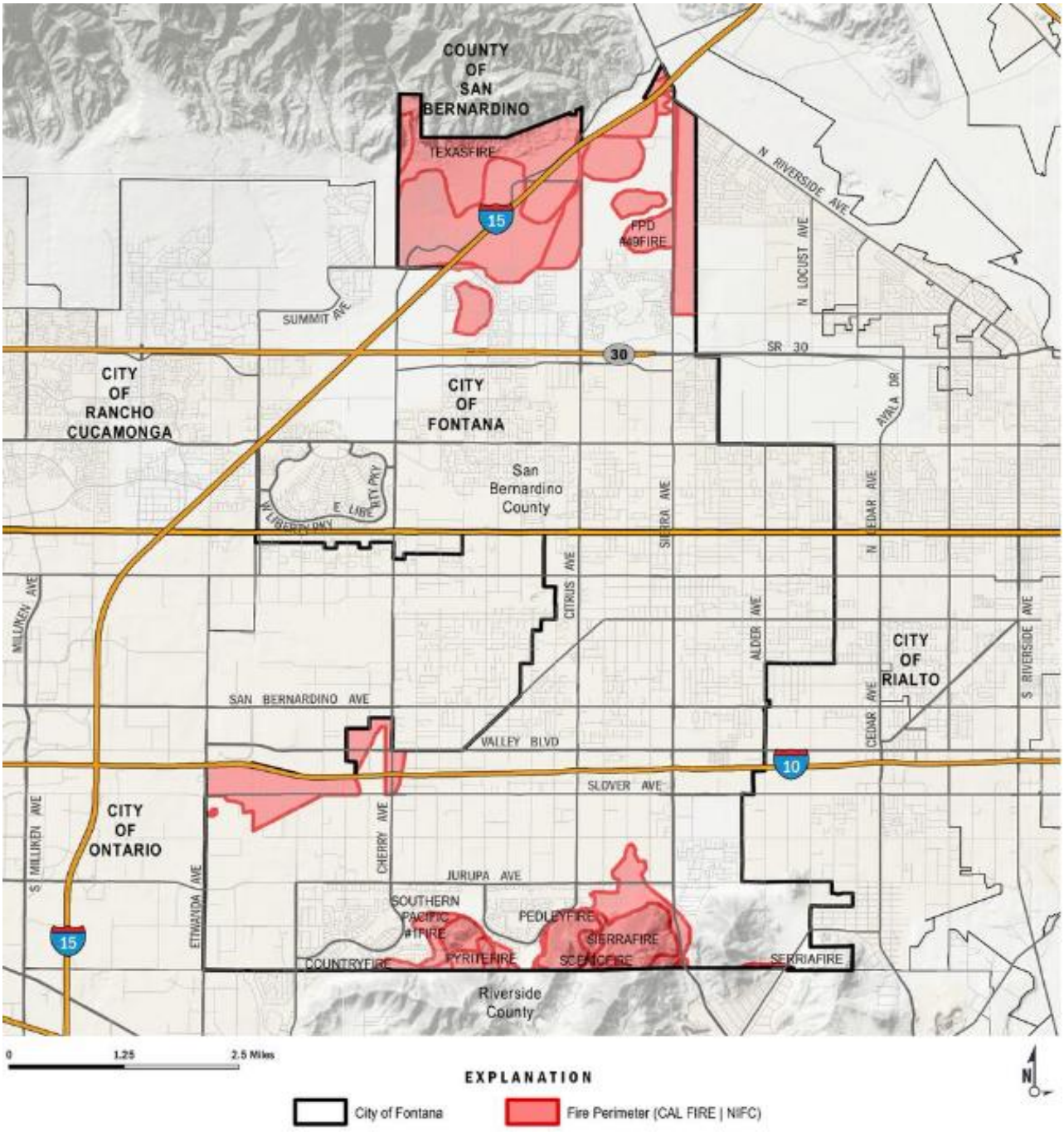


Figure 4-5: Fire Perimeter City of Fontana

Source: Cal Fire/ NFIC

4.4.4 Magnitude/Severity

The magnitude and severity of a wildfire event is measured by calculating the number of acres burned in a specific wildfire event. CAL FIRE adopted Fire Hazard Severity Zone maps for LRA

in June 2008. The Fire Severity Zones for City of Fontana identify areas of Very High, High, and Moderate fire hazard severity throughout the County and are mapped in Figure 4-6.

Fire Severity Zones are used in determining additional protective measures required when building new structures or remodeling older structures within the particular zone. Additional measures must be taken on the property around a structure in the higher ranked fire Severity Zones.

Fire hazard mapping is a way to measure the physical fire behavior to predict the damage a fire is likely to cause. Fire hazard measurement includes vegetative fuels, probability of speed at which a wildfire moves the amount of heat the fire produces, and most importantly, the burning fire brands that the fire sends ahead of the flaming front.

The model used to develop the information in accounts for topography, especially the steepness of the slopes (fires burn faster as they burn up-slope.). Weather (temperature, humidity, and wind) also has a significant influence on fire behavior. The areas depicted as moderate and high in are of particular concern and potential fire risk in these are constantly increasing as human development, and the wildland urban interface areas expand.

4.4.5 Frequency/Probability of Future Occurrences

In San Bernardino County, wildfire season commences in the summer when temperatures are high, humidity is low, and conditions remain dry. The season continues into the fall, when the County experiences high velocity, very dry winds coming out of the desert. A statewide drought beginning in 2011 has caused the state to be the driest it's been since record keeping began back in 1895 (California 2016). This has caused extremely dry conditions in unincorporated areas of the County creating plentiful fuel sources for wildfires.

USGS LANDFIRE (Landscape Fire and Resource Management Planning Tools), is a shared program between the wildland fire management programs of the U.S. Department of Agriculture Forest Service and U.S. Department of the Interior, providing landscape scale geo-spatial products to support cross-boundary planning, management, and operations. Historical fire regimes, intervals, and vegetation conditions are mapped using the Vegetation Dynamics Development Tool (VDDT). This USGS data supports fire and landscape management planning goals in the National Cohesive Wildland Fire Management Strategy, the Federal Wildland Fire Management Policy, and the Healthy Forests Restoration Act.

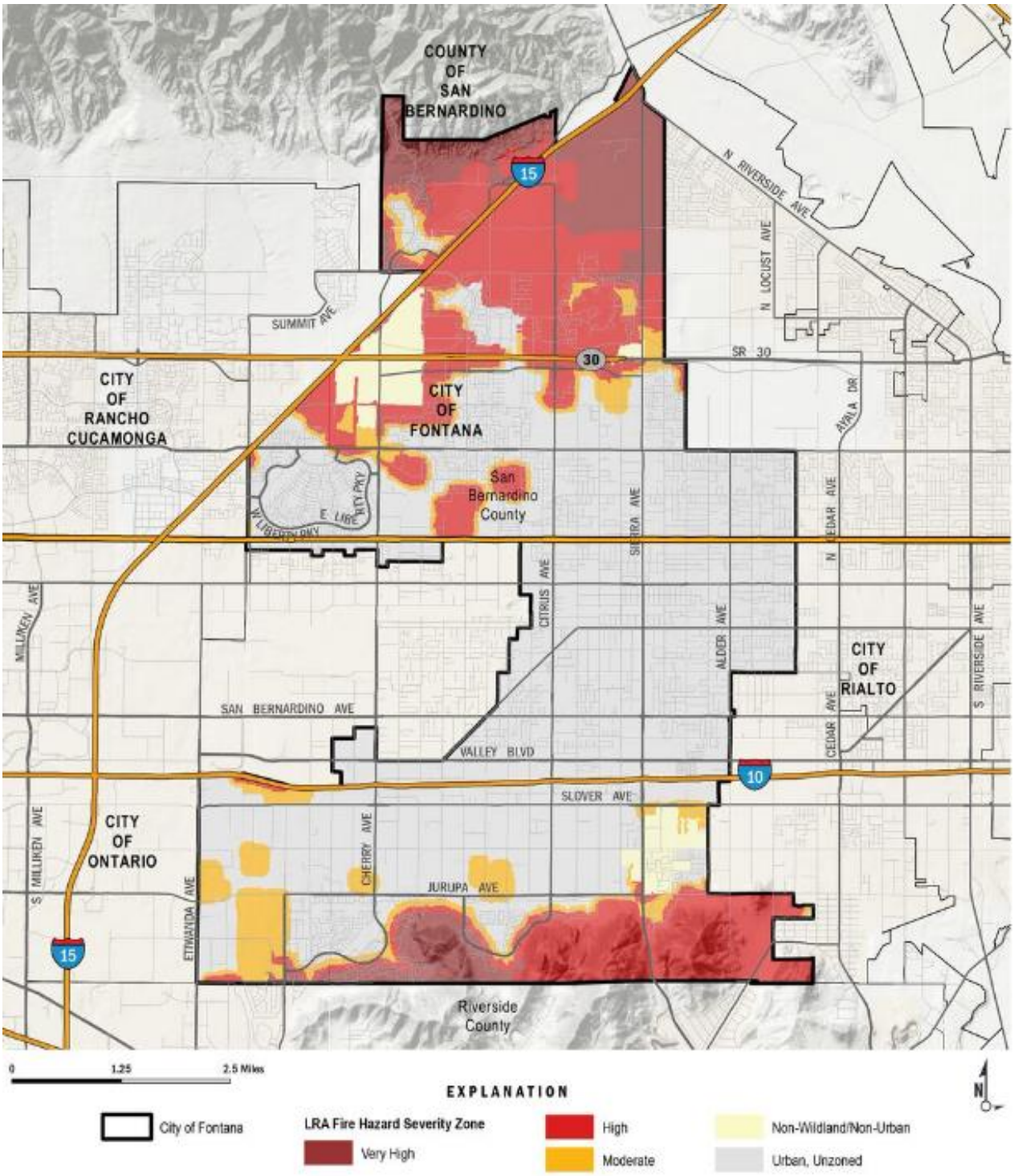


Figure 4-6: Wildfire Hazard Severity Zones

Source: Cal Fire

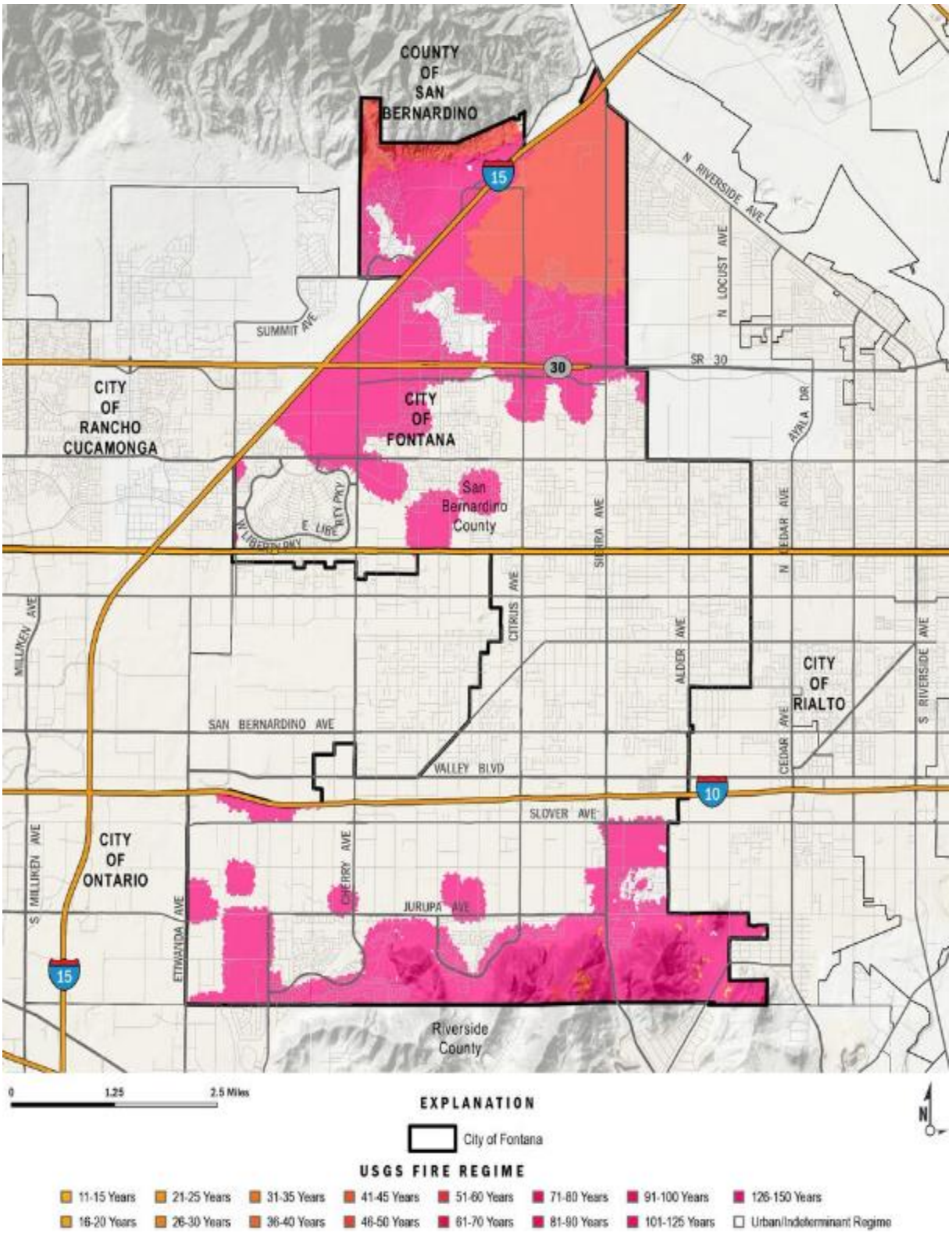


Figure 4-7: Wildfire Return Interval Map

Source: USGS LandFire

As part of the USGS Landfire data sets, the Mean Fire Return Interval (MFRI) layer quantifies the average period between fires under the presumed historical fire regime. MFRI is intended to describe one component of historical fire regime characteristics in the context of the broader historical time period represented by the LANDFIRE Biophysical Settings (BPS) layer and BPS Model documentation.

MFRI is derived from the vegetation and disturbance dynamics model VDDT (Vegetation Dynamics Development Tool) (LF_1.0.0 CONUS only used the vegetation and disturbance dynamics model LANDSUM). This layer is created by linking the BpS Group attribute in the BpS layer with the Refresh Model Tracker (RMT) data and assigning the MFRI attribute. This geospatial product should display a reasonable approximation of MFRI, as documented in the RMT. See Figure 4-7 for predicted fire return interval for the jurisdictional area.

4.4.6 Future Development in High Fire Hazard Severity Zones

The future impacts of wildfire on the City based on anticipated future development are significant. This is because of the fact that, of the existing land that is yet to be developed within the City, a large portion of it is in the High and Very High Fire Hazard Severity Zones (FHSZ.) This will result in many new residential homes and some commercial buildings being exposed to these same wildfire hazards and conditions that have already been discussed. In addition, much of the land that is within the LAAFCO Sphere of Influence, and will eventually be annexed, is within wildfire prone areas. For instance, adjacent to the northern portion of the City, the entire 661 acre portion within the Sphere of Influence, part of which may be annexed and developed as early as five years from now, is within the FHSZ.

The type of development that the City anticipates will occur within the FHSZ is predominately residential, both single family dwellings (tract houses) and multiple family dwellings such as apartments and condominiums. This creates a greater potential impact because these structures are the least fire resistive in their construction and the population groups that inhabit them are the least prepared to evacuate in a large scale wildfire event. Currently there are two very large master-planned residential developments that lie partially or mostly within the FHSZ, which together are proposing the construction of more than 2,500 residential dwelling units. These and other projects that are slated to be developed in these areas are medium or higher densities, where property setbacks are minimal and construction is extremely lightweight, further increasing the vulnerability from wildfire.

4.5 Earthquake /Geologic Hazard Profile



An earthquake is both the sudden slip on an active fault and the resulting shaking and radiated seismic energy caused by the slip (USGS 2016). The majority of major active faults in the City of Fontana area are strike-slip faults. For this type of fault, during an earthquake event, one side of a fault line slides past the other. The rupture from this type of fault extends almost vertically into the ground.

Earthquakes are a significant concern to the City of Fontana**.** The area around City of Fontana is seismically active since it is situated on the boundary between two tectonic plates. Describe seismic activity and faults for the region. Earthquakes can cause serious structural damage to buildings, overlying aqueducts, transportation facilities, utilities, and can lead to loss of life. In addition, earthquakes can cause collateral emergencies including dam and levee failures, fires, and landslides. Seismic shaking is by far the single greatest cause of damage from an earthquake in City of Fontana followed by liquefaction.

Liquefaction occurs when loosely packed sandy or silty materials saturated with water are shaken hard enough to lose strength and stiffness. Liquefied soils behave like a liquid and are responsible for tremendous damage in an earthquake. For example, it can cause buildings to collapse, pipes to leak, and roads to buckle.

Faults

According to the California Geological Survey (CGS), a fault is defined as "*a fracture or zone of closely associated fractures along which rocks on one side have been displaced with respect to those on the other side* (Bryant and Hart, 2007)." CGS describes faults and fault zones as follows: "*Most faults are the result of repeated displacement that may have taken place suddenly and/or by slow creep. A fault is distinguished from those fractures or shears caused by landslides or other gravity-induced surface failures. A fault zone is an area of related faults that are commonly braided and subparallel, but may be branching and divergent. A fault zone has significant width (with respect to the scale at which the fault is being considered, portrayed, or investigated), ranging from a few feet to several miles* (SP42, CGS 2007)*"*

The City of Fontana contains both active and potentially active faults. According to the USGS in 2008, "there is a 99% probability in the next 30 years there will be an earthquake 6.7 or larger in California." Southern California is a seismically active region and commonly experiences ground shaking from earthquakes along active faults. The State Mining and Geology Board define an active fault as one which has "*had surface displacement within Holocene time (about the last 11,000 years)".* Figure 4-9 and Map 1 in Appendix E show the location of faults and their fault zones in Fontana. The three faults that dominate the seismic hazard for the City of Fontana are the San Andreas, San Jacinto and Cucamonga faults.

Surface rupture

Surface rupture occurs when the ground surface is broken due to fault movement during a seismic event. The location of surface rupture generally can be assumed to be along an active major fault trace. Since there are no preventive measures to stop surface rupture, faults are identified with

the purpose of delineating zones over the surface tract of potentially hazardous faults where construction should be avoided.

The San Andreas and San Jacinto faults are both right-lateral, strike-slip faults, which means the primary sense of movement is for the two sides of the fault to slide horizontally past each other along the fault plane. In contrast, the Cucamonga fault is a thrust fault. It dips (slopes) northward beneath the San Gabriel Mountains. The San Gabriel Mountains have been uplifted and thrusted southward over the valley by past movement on the Cucamonga fault.

The San Andreas Fault is the longest fault in California, and as such it is capable of producing a larger earthquake than any other fault in California. During the brief period of recorded history, the San Andreas Fault has produced two great earthquakes, one in 1906 in northern California and the other in 1857 in south-central California. The rupture zones of these two earthquakes are separated by the creeping segment of the San Andreas Fault, along which stress is being relieved gradually and continuously, and no great earthquake is expected. Therefore, simultaneous rupture of the portions of the fault north and south of the creeping segment is not likely. Nonetheless, the portion of the San Andreas fault that is south of the creeping segment is 545 kilometers long, which makes it capable of producing a Mw8.0 or larger earthquake if that entire portion were to rupture in a single earthquake (Wells and Coppersmith, 1994).

Smaller earthquakes produced by rupture of shorter segments of the San Andreas Fault are also possible. For example, if the 78 kilometer long segment of the San Andreas Fault that extends along the northern side of San Bernardino were to rupture by itself, it would produce an earthquake with a magnitude of about Mw 7.2.

The San Jacinto fault also represents a significant seismic hazard for the City of Fontana. The conditional probability for rupture of this segment is estimated to be 37 percent within the next 30 years (WGCEP, 1995). If this segment were to rupture by itself it would produce a Mw 6.8 earthquake. If it ruptured in conjunction with other segments of the San Jacinto fault to the southeast it could produce an earthquake as large as Mw7.4 to 7.9 (WGCEP, 1995).

The Cucamonga fault forms the eastern end of the larger Sierra Madre thrust fault system, which extends westward from Cajon Pass along the southern flank of the San Gabriel Mountains. If the Cucamonga fault were to rupture its 20 to 28 kilometer length suggests that it would produce an earthquake of about Mw6.6 to 6.75 (average size of historical earthquakes with this length) to Mw6.9 to 7.0 (average size plus one standard deviation) (Wells and Coppersmith, 1994).



Figure 4-8: Surface Rupture

Ground shaking

Ground shaking is a general term referring to all aspects of motion of the earth's surface resulting from an earthquake, and is normally the major cause of damage in seismic events. The extent of ground shaking is controlled by the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions. Magnitude is a measure of the energy released by an earthquake; it is assessed by seismographs. Intensity is a subjective measure of the perceptible effects of seismic energy at a given point and varies with distance from the epicenter and local geologic conditions. Intensity can also be quantitatively measured using accelerometers (strong motion seismographs) through Peak Ground Acceleration (PGA) that record ground acceleration at a specific location, a measure of force applied to a structure under seismic shaking. Acceleration is measured as a fraction or percentage of the acceleration under gravity (g). The Modified Mercalli Intensity (MMI) scale is a subjective ranking scale that illustrates the relationship between shaking intensity and the potential damage to man-made structures.

Ground shaking is the primary cause of damage and injury during earthquakes and can result in surface rupture, liquefaction, land-slides, lateral spreading, differential settlement, tsunamis, building failure, and broken gas and other utility lines, leading to fire and other collateral damage. The intensity and severity of ground motion is dependent on the earthquake's magnitude, distance from the epicenter and underlying soil and rock properties. Areas underlain by thick, saturated, unconsolidated soils will experience greater shaking motion than areas underlain by firm bedrock.

Fires and structural failure are the most hazardous results of ground shaking. Most earthquake-induced fires start because of ruptured power lines and gas or electrically-powered stoves and equipment, while structural failure is generally the result of age and type of building construction.

4.5.1 Regulatory Environment

Numerous building and zoning codes exist at a state and local level to decrease the impact of an earthquake event and resulting liquefaction on residents and infrastructure. Building and zoning codes include the Alquist-Priolo Earthquake Fault Zoning Act of 1972, Seismic Hazards Mapping Act of 1990, 2013 California Standards Building Code (CSBC), and City of Fontana General Plan. To protect lives and infrastructure in the City of Fontana, the following building and zoning codes are used.

There are several Federal and State programs and regulations pertaining to public safety that provide the legal framework to the Local Hazard Mitigation Plan. These programs provide the minimum guidelines and criteria that must be complied with – local jurisdictions can choose to go beyond the Federal or State requirements and implement more stringent regulations.

California Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was signed into law in 1972 with its primary purpose being to mitigate the hazard of fault rupture by prohibiting the location of structures for human occupancy across the trace of an active fault. The Act requires the State Geologist to delineate "Earthquake Fault Zones" along faults that are "sufficiently active" and "well defined." The Act dictates that cities and counties withhold development permits for projects within an Earthquake Fault Zone within their jurisdiction until geologic investigations demonstrate that the projects are not threatened by surface displacements from future earthquakes. Projects include all land divisions and most structures for human occupancy. State law exempts single-family wood-frame and steel-frame dwellings that are less than three stories and are not part of a development of four units or more. However, local agencies can be more restrictive than the State.

California Seismic Hazards Mapping Act

The goal of the Seismic Hazards Mapping Act of 1990 is to minimize loss of life and property by identifying and mitigating seismic hazards. The act addresses non-surface fault rupture earthquake hazards, including strong ground shaking, liquefaction, and seismically induced landslides. The State agency charged with implementation of the Act is the California Geological Survey (CGS). The CGS prepares and provides local governments with seismic hazard zone maps that identify areas susceptible to amplified shaking, liquefaction, earthquake-induced landslides, and other ground failures. The seismic hazard zones delineated by the CGS are referred to as “zones of required investigation” because site-specific geological investigations are required for construction projects located within these areas.

4.5.1.1 State

The 1971 San Fernando Earthquake resulted in the destruction of numerous structures built across its path. This led to passage of the Alquist-Priolo Earthquake Fault Zoning Act. This Act prohibits the construction of buildings for human occupancy across active faults in the State of California. Similarly, extensive damage caused by ground failures during the 1989 Loma Prieta Earthquake focused attention on decreasing the impacts of landslides and liquefaction. This led to the creation of the Seismic Hazards Mapping Act. This Act increases construction standards at locations where ground failures are probable during earthquakes. Active faults in San Bernardino County have been included under the Alquist-Priolo Geologic Hazards Zones Act and Seismic Hazards Mapping Act.

4.5.1.2 Local

The 2013 California Building Standards Code (also known as Title 24) became effective for the County on January 1st, 2014. Title 24 includes CBC Section 3417: Earthquake Evaluation and Design for Retrofit of Existing Buildings which can be viewed at http://www.documents.dgs.ca.gov/bsc/2015TriCycle/Pre-Cycle-2015/CBC-CEBC/BSC-0X-15-ET-Pt10-Agenda-4d.pdf.

The 2013 CSBC is based on the International Building Codes (IBC), which is widely used throughout the United States. CSBC was modified for California's conditions to include more detailed and stringent building requirements. The City of Fontana, utilizes the 2016 CSBC to regulate the infrastructure in the City of Fontana. This includes unreinforced masonry (URM) buildings. For new buildings, City of Fontana includes earthquake safety provisions, with enhancements for essential services buildings, hospitals, and public schools.

4.5.1.3 General Plan Geologic Hazard Reduction Policies

What can the City do to minimize seismic hazards?

The Cucamonga and San Jacinto faults, two of the most active faults in southern California, extend across the northern portion of the city of Fontana. Three possible faults have been mapped at depth under the city of Fontana and its area of interest. Two of these form groundwater barriers (Barrier H and Barrier J). The third feature (Fontana Seismic Trend) is delineated by a pronounced concentration of small earthquakes, and may be expressed at the surface by a series of northeast-trending lineaments that have not been investigated previously.

The city of Fontana also lies within a few miles of the San Andreas Fault. As a result, the entire study area is susceptible to very strong ground shaking, and some areas of the city can be impacted by surface fault rupture. Given that ground water may occur within 40 feet of the surface in that portion of the Lytle Creek channel located within the city, the channel is considered susceptible to liquefaction. Other areas in the southern portion of the city may also have a moderate susceptibility to liquefaction due to seasonal saturation of the near-surface sediments.

A maximum magnitude earthquake on any of the three faults close to the city (Cucamonga, San Jacinto and San Andreas faults) has the potential to generate significant damage to wood-frame, reinforced concrete and steel structures, and to mobile homes. Most of the casualties anticipated in the area as a result of any of these earthquakes are thought to be associated with collapse of reinforced concrete and steel structures common in the commercial and industrial sections of the city. Mobile homes are expected to suffer extensive to complete damage. In all, nearly 50 percent of the structures in the area are expected to experience at least moderate damage.

Damage to the local hospital is expected to be significant; given the number of people in the Fontana area that are expected to require hospitalization after any of these earthquakes, the existing hospital, even if fully operational, is not expected to be able to handle the demand. The models suggest that the local potable water and electric power systems will be severely taxed during an earthquake on any of the major earthquake sources nearby. HAZUS estimates that 96 percent of the schools in the area will experience at least moderate damage, although none will be completely damaged. The model also estimates that none of the schools in the area will be more than 50 percent functional one day after the earthquake. All police stations and fire stations are anticipated to suffer at least moderate damage.

4.5.2 Past Occurrences

The LHMP Planning Team noted the following regional and local events for the seismic activity in City of Fontana.

Date	Magnitude (Mw) & Location	Fatalities
05/15/1910	Mw 6.0 – Elsinore, California	0
04/21/1918	Mw 6.9 – San Jacinto, California	1
07/22/1923	Mw 6.3 – 7 miles south of San Bernardino, east-southeast of Fontana, California	0
12/04/1948	Mw 6.0 – Desert Hot Springs, California	0
03/19/1954	Mw 6.4 – 15 miles west of Salton City, about 30 miles south of Indio, California	0
09/12/1970	Mw 5.2 – Lytle Creek, California	0
02/09/1971	Mw 6.6 – San Fernando, California	65
07/08/1986	Mw 5.6 – N. Palm Springs, California	0
02/28/1990	Mw 5.4 – Upland, California	0
04/22/1992	Mw 6.1 – Joshua Tree, California	0
06/28/1992	Mw 7.3 – Landers, California	3
06/28/1992	Mw 6.5 – Big Bear, California	0
01/17/1994	Mw 6.7 – Northridge, California	60
10/16/1999	Mw 7.1 – 32 miles north of the town of Joshua Tree / 47	0
02/22/2003	Mw 5.2 – Big Bear City, California	0
07/29/2008	Mw 5.5 – Chino Hills, California	0
04/04/2010	Mw 7.2 – Baja California	4
07/07/2010	Mw 5.4 – Borrego Springs, California	0
08/26/2012	Mw 5.4 – Brawley, California	0
03/28/2014	Mw 5.4 – Brea, California	0
09/16/2015	Mw 4.0-Big Bear California	0
07/25/2015	Mw 4.2-Fontana, California	0
12/30/2015	Mw 4.4-Muscoy, California	0
01/06/2016	Mw –Banning, California	0
06/10/2016	Mw 5.2 – Borrego	0

Table 4-4: Earthquake Historical Occurrences

There are hundreds more small (M<4.0) earthquakes that have occurred within San Bernardino County during this same time frame. Those with a magnitude of below 4.0 are not listed.

1910 Elsinore Earthquake

Not a particularly strong or damaging quake -- though it did topple chimneys in Corona, Temecula, and Wildomar, and caused some alarm among the citizens of Los Angeles and San Diego, as well as those in towns closer to the epicenter. What is notable about this quake is that best estimates place its epicenter as somewhere along the Elsinore fault zone, a fault zone along which no other earthquakes as large as or greater than magnitude 6 have been historically recorded.

1918 San Jacinto Earthquake

Major damage occurred in San Jacinto. Several residents were injured, and one was killed. In the business section of San Jacinto, a town of about 1,000 population, only one new concrete building

and one frame building remained standing after the earthquake. Most of the ruined buildings were of poor construction, however. Many lengthwise cracks were observed in the highway between San Jacinto and Hemet, but cracks were not observed at the sides of this highway.

1923 North San Jacinto Fault Earthquake

Damage from this quake, which awoke sleepers across southern California, was greatest in San Bernardino and Redlands, though it consisted primarily of minor damage -- chimneys thrown down, broken windows, and the like. Two people were critically injured, but no one was killed.

Those buildings which sustained significant damage in the shaking were generally of poor construction. The San Bernardino County Hospital and the Hall of Records were badly damaged. Probably the greatest damage occurred at the State Hospital at Patton. Trees fell in the nearby San Bernardino Mountains.

1948 Desert Hot Springs Earthquake

The Desert Hot Springs earthquake not only was felt over a large area (as far away as central Arizona, parts of Mexico, Santa Catalina Island, and Bakersfield), but also managed to cause notable damage in regions far from the epicenter. In the Los Angeles area, a 5800-gallon water tank split open, water pipes were broken at UCLA and in Pasadena, and plaster cracked and fell from many buildings. In San Diego, a water main broke. In Palm Springs, the city hit hardest by the quake, thousands of dollars of merchandise was thrown from shelves and destroyed. Two people were injured when the shaking induced a crowd to flee a movie theater in a panic.

1954 San Jacinto Earthquake

The earthquake, sometimes referred to as the Arroyo Salada earthquake, caused minor damage over a wide area of southern California, cracking plaster walls as far away as San Diego, and knocking plaster from the ceiling at the Los Angeles City Hall. In Palm Springs, a water pipe was broken, and the walls of several swimming pools were cracked. Part of San Bernardino experienced a temporary blackout when power lines snapped in the shaking.

1970 Lytle Creek Earthquake

Twenty minutes after a magnitude 4.1 "foreshock" (which was actually in a slightly different location), the Lytle Creek earthquake struck the area near Cajon Pass, knocking a San Bernardino radio station off the air, and causing landslides and rock falls in the Transverse Ranges. Several roads were blocked or partially blocked. The quake caused some unusual damage in areas a fair distance from the epicenter. Power was disrupted in the Santa Monica Mountains northwest of Hollywood. A high-pressure water system in a Riverside aerospace plant was damaged, leading to a subsequent boiler explosion that injured four people. More typical minor damage also occurred, primarily in the Lytle Creek area (intensity VII on the Modified Mercalli Scale) and to a lesser degree in the nearby towns of Colton, Crestline, Cucamonga, Fontana, Glendora, Highland, Mt. Baldy, Rialto, Rubidoux, and Wrightwood.

1971 Sylmar Earthquake

This earthquake occurred on the San Fernando fault zone, a zone of thrust faulting which broke the surface in the Sylmar-San Fernando Area. The total surface rupture was roughly 19 km (12 miles) long. The maximum slip was up to 2 meters (6 feet). The earthquake caused over $500

million in property damage and 65 deaths. Most of the deaths occurred when the Veteran's Administration Hospital collapsed. Several other hospitals, including the Olive View Community Hospital in Sylmar suffered severe damage. Newly constructed freeway overpasses also collapsed. Loss of life could have been much greater had the earthquake struck at a busier time of day. In response to this earthquake, building codes were strengthened and the Alquist Priolo Special Studies Zone Act was passed in 1972. The purpose of this act is to prohibit the location of most structures for human occupancy across the traces of active faults and to mitigate thereby the hazard of fault rupture.

1986 N. Palm Springs Earthquake

This earthquake occurred along either the Banning fault or the Garnet Hill fault. The earthquake was responsible for at least 29 injuries and the destruction or damage of 51 homes in the Palm Springs-Morongo Valley area. It also triggered several landslides in the area. Damage caused by this quake was estimated at over $4 million. Ground cracking was observed along the Banning, Mission Creek and Garnet Hill faults, but these cracks were due to shaking, not surface rupture.

1990 Upland Earthquake

The 1990 Upland earthquake was much more damaging than the quake of 1988. It triggered landslides which blocked roads in the Mount Baldy area, and it caused some damage to the San Antonio Dam, which lies across the path of the main watershed coming south from Mount Baldy. Thirty-eight people sustained minor injuries, and damage was considerable near the epicenter. The quake was felt as far away, northeast, as Las Vegas, Nevada, and as far south as Ensenada, Mexico.

1992 Joshua Tree Earthquake

The Joshua Tree earthquake raised some alarms due to its proximity to the San Andreas Fault. Damage caused by the Joshua Tree was slight to moderate in the communities of Joshua Tree, Yucca Valley, Desert Hot Springs, Palm Springs, and Twenty-nine Palms. Thirty-two people had to be treated for minor injuries. Though somewhat forgotten in the wake of the Landers earthquake, the Joshua Tree quake was a significant event on its own, and was felt as far away as San Diego, Santa Barbara, Las Vegas, Nevada, and even Phoenix, Arizona.

1992 Landers Earthquake

The quake was described at the time as the largest earthquake to have occurred in the contiguous United States in 40 years. Damage to the area immediately surrounding the epicenter was severe. Roads were buckled, buildings and chimneys collapsed. There were also large surface fissures. To the west in the Los Angeles Basin was much less severe. The majority of the damage throughout the LA area involved items knocked off shelves. Unlike the Northridge event a year and half later, no freeway bridges were knocked down because of the epicenter's remote location. Power was knocked out to thousands of residents, but generally restored within two to three hours. There was some damage to homes from water displaced from swimming pools. Loss of life in this earthquake was minimal. Three people died and more than 400 people sustained injuries.

1992 Big Bear Earthquake

This earthquake struck little more than 3 hours after the Landers earthquake on June 28, 1992 at 8:05am. This earthquake is technically considered an aftershock of the Landers earthquake (indeed, the largest aftershock), although the Big Bear earthquake occurred over 20 miles west of the Landers rupture, on a fault with a different orientation and sense of slip than those involved in the main shock. From its aftershocks, the causative fault was determined to be a northeast trending left-lateral fault. This orientation and slip are considered "conjugate" to the faults that slipped in the Landers rupture. The Big Bear earthquake did not break the ground surface, and, in fact, no surface trace of a fault with the proper orientation has been found in the area. The Big Bear earthquake caused a substantial amount of damage in the Big Bear area, but fortunately, it claimed no lives. However, landslides triggered by the quake blocked roads in the mountainous area, aggravating the clean-up and rebuilding process.

1994 Northridge Earthquake

Because of this earthquake, sixty people were killed, more than 7,000 injured, 20,000 homeless and more than 40,000 buildings damaged in Los Angeles, Ventura, Orange and San Bernardino Counties. Severe damage occurred in the San Fernando Valley: maximum intensities of (IX) were observed in and near Northridge and in Sherman Oaks. Lesser, but still significant damage occurred at Fillmore, Glendale, Santa Clarita, Santa Monica, Simi Valley and in western and central Los Angeles. Damage was also sustained to Anaheim Stadium. Collapsed overpasses closed sections of the Santa Monica Freeway, the Antelope Valley Freeway, the Simi Valley Freeway and the Golden State Freeway. Fires caused additional damage in the San Fernando Valley and at Malibu and Venice. Preliminary estimates of damage are between 13 and 20 billion U.S. dollars. Felt throughout much of southern California and as far away as Turlock, California; Las Vegas, Nevada; Richfield, Utah and Ensenada, Mexico. The maximum recorded acceleration exceeded 1.0g at several sites in the area with the largest value of 1.8g recorded at Tarzana, about 7 km south of the epicenter. A maximum uplift of about 15 cm occurred in the Santa Susana Mountains and many rockslides occurred in mountain areas, blocking some roads. Some ground cracks were observed at Granada Hills and in Potrero Canyon. Some liquefaction occurred at Simi Valley and in some other parts of the Los Angeles Basin.

1999 Hector Mine Earthquake

The earthquake was felt throughout Southern California, as well as in Las Vegas, Nevada. Many people were awakened in Las Vegas, with many reporting dizziness or trouble walking. Reports were filed as far north as Carson City, Nevada, where one woman reported waking up, hearing chimes in her house ringing. Nearly no damage was reported in the immediate area of the earthquake due to the remote location of the epicenter in the Mojave Desert, with no settlements for 14 miles, however Amtrak's westbound Southwest Chief (train #3) was an unusual victim of the earthquake. The train was traveling very near the epicenter when the quake struck. The combined force of the quake and train caused several rails to come loose and the train derailed. Only minor injuries were reported, and the trainset suffered repairable damage.

2003 Big Bear City Earthquake

The earthquake occurred about 90 miles east of Los Angeles in the San Bernardino Mountains near Big Bear City, jarring residents awake and shaking buildings over a wide area, but not causing any serious damage or injuries. Five aftershocks in the Mw 4.0+ range occurred within the first six hours of the main shock, frightening many people and contributing to the minor damage reported.

2008 Chino Hills Earthquake

The Chino Hills earthquake caused no deaths or significant damage due to the physical location of its epicenter. Most of the infrastructure is relatively new and well suited to withstand a large quake. However, the high volume of telephone use following the shock overloaded provider capacity and disrupted service into the afternoon. Amusement rides at Disneyland, Six Flags Magic Mountain, Universal Studios Hollywood and Knott's Berry Farm were evacuated and temporarily shut down. This earthquake was felt across much of southern California, and as far away as Las Vegas, Nevada.

2010 Borrego Springs Earthquake

A M5.4 earthquake occurred in Southern California at 4:53 pm (Pacific Time) about 30 miles south of Palm Springs, 25 miles southwest of Indio, and 13 miles north-northwest of Borrego Springs. The earthquake occurred near the Coyote Creek segment of the San Jacinto fault, which is one of the strands of the San Jacinto fault. The earthquake exhibited sideways horizontal motion to the northwest, consistent with slip on the San Jacinto fault. It was followed by more than 60 aftershocks of M1.3 and greater during the first hour. Seismologists expect continued aftershock activity. The earthquake was felt all over Southern California, with strong shaking near the epicenter.

2012 Brawley Earthquake

A M5.4 earthquake occurred at 12:57 pm (Pacific Time) about 4 km north-northwest of Brawley on August 26, 2012. The depth of the earthquake was 8.3 km. it was widely felt across southernmost California, northern Baja California, and western Arizona. Its north-south extent ranges from the northern section of the Imperial fault, starting approximately 10 km north of the United States-Mexico international border and connecting to the southern end of the San Andreas Fault, where it terminates in the Salton Sea.

2014 Brea Earthquake

A M5.1 earthquake occurred at 9:09 pm (Pacific Time) about 2 km from Brea on Friday, March 28, 2014. The quake was preceded by two smaller foreshocks, and more than 100 aftershocks followed, including a magnitude-4.1 that hit Saturday afternoon, the largest in the sequence so far. No major injuries were reported. It was centered near La Habra in Orange County — about 25 miles southeast of downtown Los Angeles — at a depth of about 5 miles. It was felt as far south as San Diego and as far north as Ventura County, according to citizen responses collected online by the USGS. One community was evacuated from their homes after firefighters discovered foundation problems. Fire crews red-tagged 20 apartment units in a building in the Orange County city of Fullerton after finding a major crack in the foundation. Structural woes including broken chimneys and leaning were uncovered in half a dozen single-family houses, which were also deemed as unsafe to occupy until building inspectors clear the structures. The damage displaced 83 residents. Another 14 residential structures around the city suffered lesser damage, including collapsed fireplaces. The estimate for damages to public property in La Habra, Fullerton and Brea totaled about $824,000. For private property, the total of reported damages was $1.75 million – about $250,000 in Brea, $1 million in Fullerton and $503,000 in La Habra.

2015 Big Bear Lake Earthquake

A M4.0 earthquake occurred at 9:10 am (Pacific Time) about 8 miles southeast Big Bear City in the San Bernardino Mountains. There was no injuries or damages reported.

2016 Borrego Springs Earthquake

A M5.2 earthquake at a depth of 0.6 miles occurred about 20 km from Borrego Springs on Friday, June 10, 2016 at 1:04 am (Pacific Time), followed by several aftershocks. 3,162 people were affected by the seismic movement. The earthquake triggered a minor rockslide on Montezuma Valley Road about 14 miles southeast of Borrego Springs, but there were no immediate reports of injuries or damage in San Diego or Riverside counties. The epicenter was 13 miles north-northwest of Borrego Springs and 16 miles south-southwest of La Quinta in Riverside County. It was strong enough to be felt in San Bernardino County. The earthquake occurred along the San Jacinto Fault. There were at least eight aftershocks in the same general area within 3 hours and 10 minutes. The strongest were magnitude-3.5 shakers at 1:06 a.m., 1:33 a.m. and 4.14 a.m. -- all at a depth of slightly more than 6 miles.

4.5.3 Location/Geographic Extent

The risk of seismic hazards to residents of City of Fontana is based on the approximate location of earthquake faults within and outside the region. This map includes Alquist-Priolo Geologic Hazards Zones Act created under the Seismic Hazards Mapping Act and the USGS Quaternary Fault and Fold Database of the United States. The USGS database contains information on faults and associated folds in the California that are believed to be sources of M>6 earthquakes during the Quaternary (the past 2.6 million years). Figure 4-9 shows fault zones in or near the City of Fontana. Per the California Department of Conservation's Earthquake Fault Zone Maps, City of Fontana is near the following active fault zones or regulatory fault zones managed by the Department of Conservation.

Historical and geological records show that Southern California has a long history of seismic events. Southern California is probably best known for the San Andreas Fault, a 400-mile long fault running from the Mexican border to a point offshore, west of San Francisco. Geologic studies show that over the past 1,400 to 1,500 years, large earthquakes have occurred at about 130-year intervals on the southern San Andreas Fault. As the last large earthquake on the southern San Andreas occurred in 1857, that section of the fault is considered a likely location for an earthquake within the next few decades.

But San Andreas is only one of dozens of known earthquake faults that crisscross Southern California. Beyond the known faults, there are a potentially large number of "blind" faults that underlie the surface of Southern California. One such blind fault was involved in the Whittier Narrows earthquake in October 1987.

Although the most famous of the faults, the San Andreas, is capable of producing an earthquake with a magnitude of 8+ on the Richter scale, some of the "lesser" faults have the potential to inflict greater damage on the urban core of the Los Angeles Basin and nearby cities.

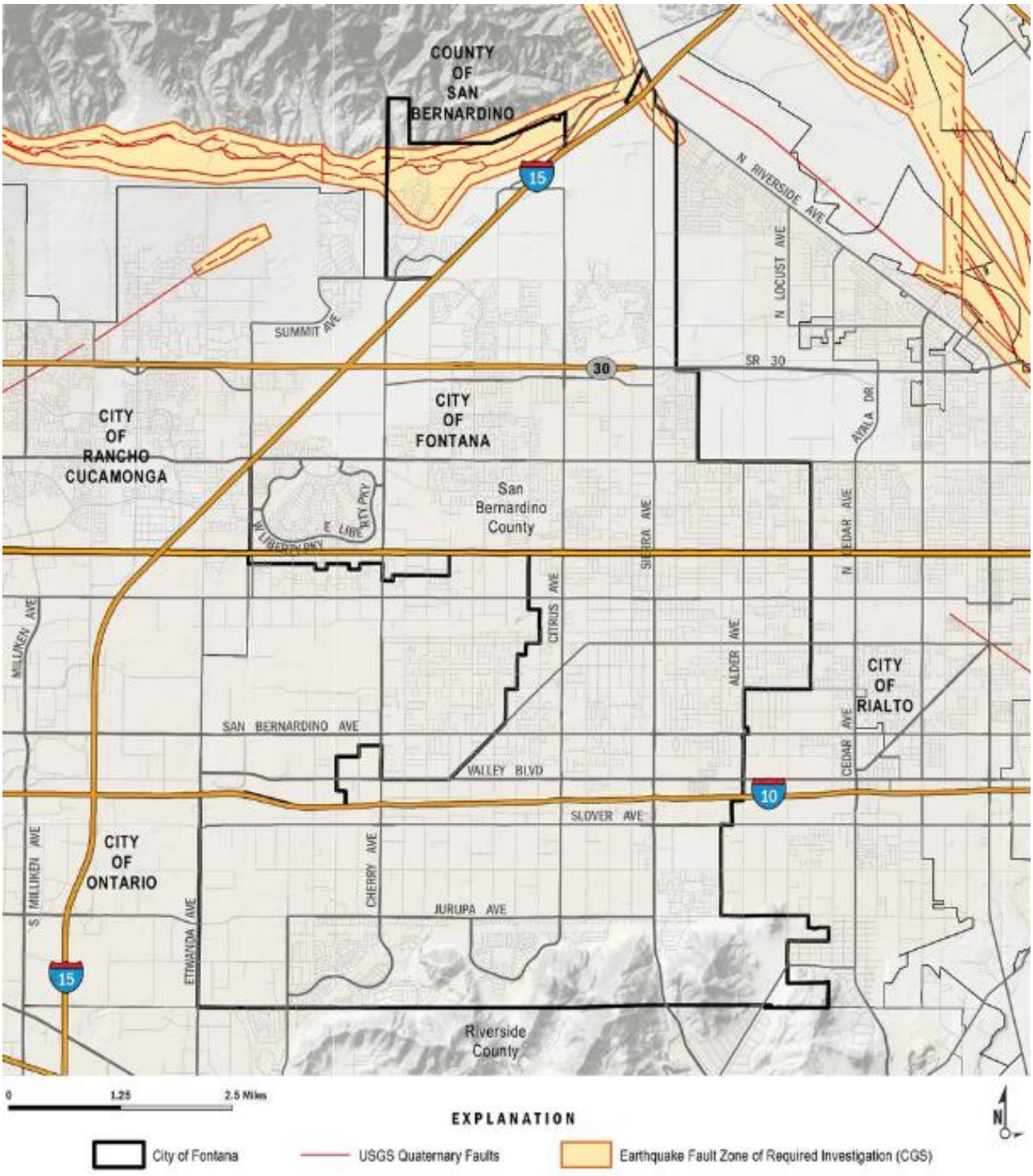


Figure 4-9: Active Fault Map

Source: Department of Conservation & USGS

4.5.4 Magnitude/Severity

The most common method for measuring earthquakes is magnitude, which measures the strengths of earthquake. Although the Richter scale is known as the measurement for magnitude, the majority of scientists currently use either the Mw Scale or Modified Mercalli Intensity (MMI) Scale. The effects of an earthquake in a particular location are measured by intensity. Earthquake intensity decreases with increasing distance from the epicenter of the earthquake.

The magnitude of an earthquake is related to the total area of the fault that ruptured, as well as the amount of offset (displacement) across the fault. As shown in Table 4-5, there are seven earthquake magnitude classes, ranging from great to micro. A magnitude class of great can cause tremendous damage to infrastructure in City of Fontana compared to a micro class, which results in minor damage to infrastructure.

Earthquake Magnitude Classes		
Magnitude Class	**Magnitude Range (M = Magnitude)**	**Description**
Great	M > 8	Tremendous damage
Major	7 <= M < 7.9	Widespread heavy damage
Strong	6 <= M < 6.9	Severe damage
Moderate	5 <= M < 5.9	Considerable damage
Light	4 <= M < 4.9	Moderate damage
Minor	3 <= M < 3.9	Rarely causes damage.
Micro	M < 3	Minor damage

Table 4-5: Moment Magnitude Scale

The MMI Scale measures earthquake intensity as shown in Table 4-6. The MMI Scale has 12 intensity levels. Each level is defined by a group of observable earthquake effects, such as ground shaking and/or damage to infrastructure. Levels I through VI describe what people see and feel during a small to moderate earthquake. Levels VII through XII describe damage to infrastructure during a moderate to catastrophic earthquake.

Earthquake Magnitude and Intensity		
Magnitude (M_w)	**Intensity (Modified Mercalli Scale)**	**Description**
1.0 – 3.0	I	I. Not felt except by very few people under especially favorable conditions.
3.0 – 3.9	II – III	II. Felt by a few people, especially those on upper floors of buildings. Suspended objects may swing.
		III. Felt quite noticeably indoors. Many do not recognize it as an earthquake. Standing motorcars may rock slightly.
4.0 – 4.9	IV – V	IV. Felt by many who are indoors; felt by a few outdoors. At night, some awakened. Dishes, windows and doors rattle.

Earthquake Magnitude and Intensity		
Magnitude (M_w)	**Intensity (Modified Mercalli Scale)**	**Description**
		V. Felt by nearly everyone; many awakened. Some dishes and windows broken; some cracked plaster; unstable objects overturned.
5.0 – 5.9	VI – VII	VI. Felt by everyone; many frightened and run outdoors. Some heavy furniture moved; some fallen plaster or damaged chimneys.
		VII. Most people alarmed and run outside. Damage negligible in well-constructed buildings; considerable damage in poorly constructed buildings.
6.0 – 6.9	VII – IX	VIII. Damage slight in special designed structures; considerable in ordinary buildings; great in poorly built structures. Heavy furniture overturned. Chimneys, monuments, etc. may topple.
		IX. Damage considerable in specially designed structures. Buildings shift from foundations and collapse. Ground cracked. Underground pipes broken.
7.0 and Higher	VIII and Higher	X. Some well-built wooden structures destroyed. Most masonry structures destroyed. Ground badly cracked. Landslides on steep slopes.
		XI. Few, if any, masonry structures remain standing. Railroad rails bent; bridges destroyed. Broad fissure in ground.
		XII. Virtually total destruction. Waves seen on ground. Objects thrown into the air.

Table 4-6: Modified Mercalli Scale

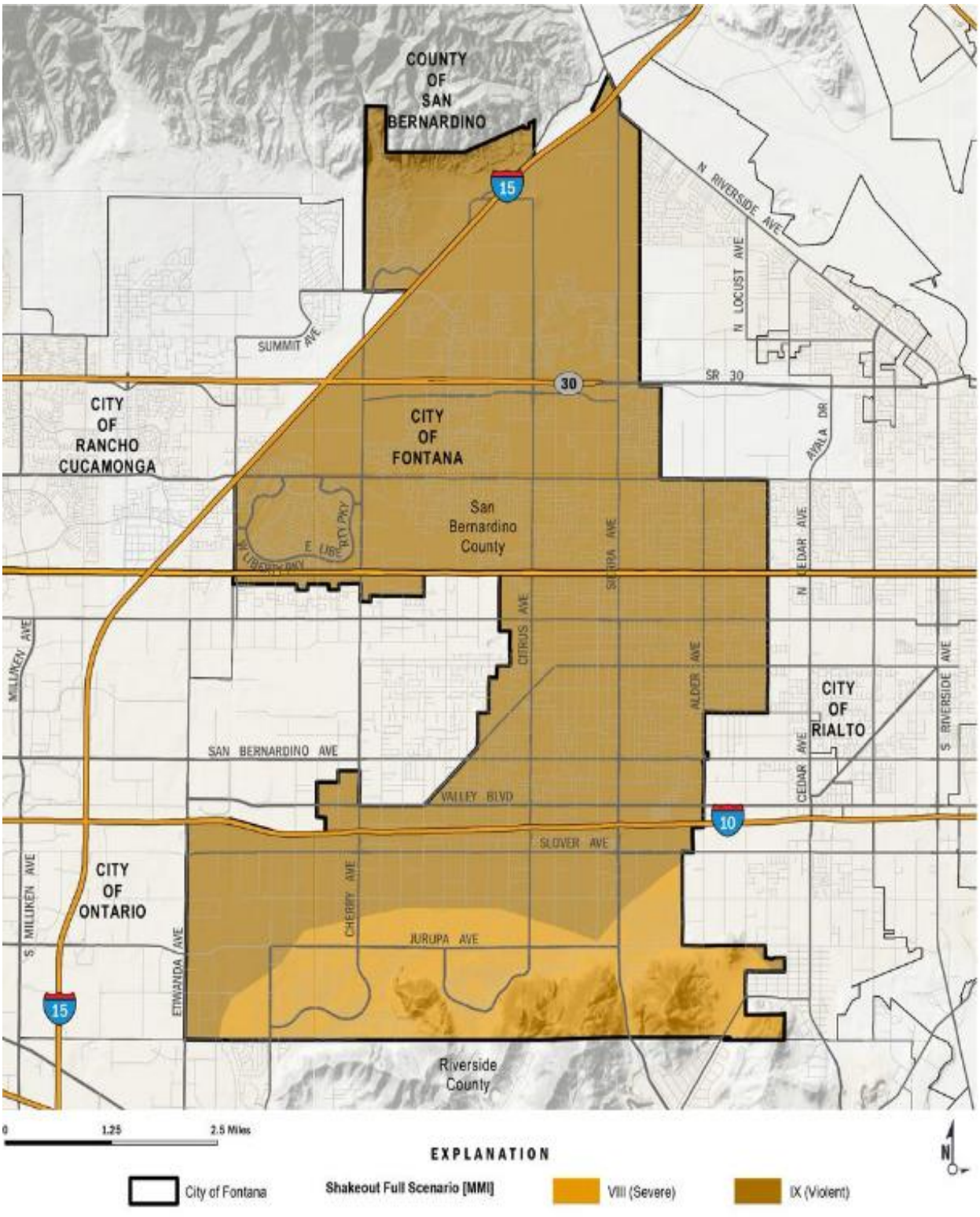


Figure 4-10: Great Shakeout Scenario MMI Classes

Source: USGS ShakeOut Full

4.5.5 Frequency / Probability of Future Occurrences

While earthquakes occur less frequently than other primary natural hazard events, they have accounted for the greatest combined losses (deaths, injuries, and damage costs) in disasters since 1950 in California and have the greatest catastrophic disaster potential (Cal EMA 2010).

The USGS estimates that the probability of an earthquake occurring over the next 30 Years in the Southern California with a magnitude of 6.7 or greater is 93 percent. Table 4-7 from the USGS lists Average time between earthquakes in the Southern California region together with the likelihood of having one or more such earthquakes in the next 30 years (starting from 2014). "Readiness" indicates the factor by which likelihoods are currently elevated, or lower, because of the length of time since the most recent large earthquakes. The values from the USGS include aftershocks. It is important to note that actual repeat times will exhibit a high degree of variability, and will almost never exactly equal the average listed in the table.

Magnitude (greater than or equal to)	Average repeat time (years)	30-year likelihood of one or more events	Readiness
5	.7	100%	1.0
6	2.3	100%	1.0
6.7	12	93%	1.0
7	25	75%	1.1
7.5	87	36%	1.2
8	522	7%	1.3

Table 4-7: Southern California Region Earthquake Probability

Source: USGS UCERF3: A New Earthquake Forecast for California's Complex Fault System FS 2015-3309

Uniform California Earthquake Forecasts (UCERF) estimated the likelihood that California will experience a magnitude 8 or larger earthquake in the next 30 years has increased from about 4.7% in 2007 (UCERF23F3F[2]) to about 7.0% for the thirty-year duration starting in 2014 (UCERF34F4F[3]). Several of the major Southern California faults have a high probability of experiencing a Magnitude 6.7 or greater earthquake within the next 30 years (Figure 4-10); 59% probability of a M6.7 or greater on the Southern San Andreas Fault, 31% probability on the San

[2] USERF2 = 2008 California Earthquake Probabilities. In April 2008, scientists and engineers released a new earthquake forecast for the State of California called the UCERF. Compiled by USGS, Southern California Earthquake Center (SCEC), and the California Geological Survey (CGS), with support from the California Earthquake Authority, it updates the earthquake forecast made for the greater San Francisco Bay Area by the 2002 Working Group for California Earthquake Probabilities.

[3] UCERF3 = 2014 California Earthquake Probabilities. UCERF3 is the first type of model, representing the latest earthquake-rupture forecast for California. It was developed and reviewed by dozens of leading scientific experts from the fields of seismology, geology, geodesy, paleoseismology, earthquake physics, and earthquake engineering. As such, it represents the best available science with respect to authoritative estimates of the magnitude, location, and likelihood of potentially damaging earthquakes throughout the state (further background on these models, especially with respect to ingredients, can be found in U.S. Geological Survey Fact Sheet 2008–3027, http://pubs.usgs.gov/fs/2008/3027/)

Jacinto Fault, and 11% probability on the Elsinore Fault. These probabilities were determined by the USGS and CGS in a 2008 study (2007 Working Group on California Earthquake Probabilities, 2008, The Uniform California Earthquake Rupture Forecast, Version 2 (UCERF 2): U.S. Geological Survey Open-File Report 2007-1437 and California Geological Survey Special Report 203 [http://pubs.usgs.gov/of/2007/1437/]).

Figure 4-11 shows the locations of major faults in California, including the four (4) major faults in Southern California in relation to San Bernardino County region. These faults are the Southern San Andreas, the San Jacinto, the Elsinore, and the Garlock Faults. There are also many smaller faults within San Bernardino County capable of producing significant earthquakes. However, these four faults are considered by the United States Geological Survey (USGS) and the California Geological Survey (CGS) to be the most dangerous in the County. (California Geological Survey Special Publication 42, Interim Revision 2007, “Fault-Rupture Hazard Zones in California” - Alquist-Priolo Earthquake Fault Zoning Act).

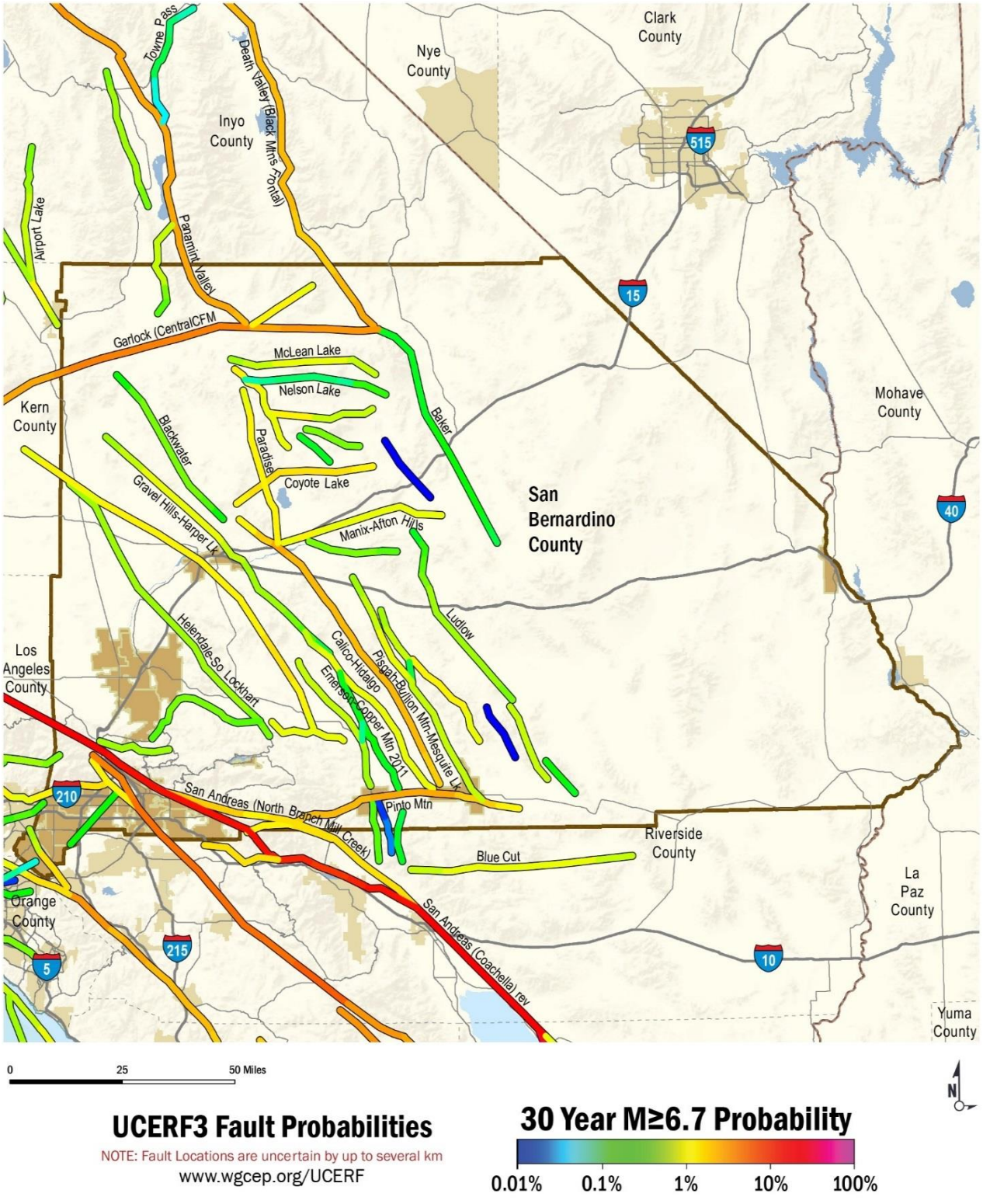


Figure 4-11: UCERF 3 Fault Probabilities

Source: USGS/ WGCEP

4.6 Landslide Hazard Profile



Landslides occur when the force pulling the material on the slope in a downward direction under gravitational influence exceeds the strength of the earth materials that compose the slope (USGS 2004). These materials may move by falling, toppling, sliding, spreading, and/or flowing. Strength of rock and soil, steepness of slope, and weight of the hillside material all play an important role in the stability of hillside areas. Weathering and absorption of water can weaken slopes, while the added weight of saturated materials or overlying construction can increase the chances of slope failure. Sudden failure can be triggered by earthquake shaking, excavation of weak slopes, and heavy rainfall.

Landslides are primarily associated with mountainous regions. Additionally, landslides can occur in areas of low relief. Landslides can occur due to geological, morphological, or human causes. These include weak and sheared materials, thawing, shrink swell, and deforestation. Landslides often accompany other natural hazard events, such as earthquakes, flooding, and wildfire.

4.6.1 Regulatory Environment

San Bernardino County has adopted the 2013 California Building Standards Code to regulate development in hillside areas in the County.

4.6.2 Past Occurrences

There have been no reported historical occurrences of landslides in the City of Fontana.

4.6.3 Location/Geographic Extent

Areas with steeper slopes, in combination with other factors described above, are more susceptible to landslides than areas on shallow slopes. Figure 4-12 illustrates the slope areas at risk to landslide in City of Fontana.

4.6.4 Magnitude/Severity

Earthquake-induced landslides are secondary earthquake hazards that occur from ground shaking. Gravity inexorably pulls hillside down, and earthquake shaking enhances this on-going process. Landslides can destroy roads, buildings, utilities, and other critical facilities necessary to respond and recover from an earthquake. Many communities in southern California with steep slopes have a high likelihood of being impacted by earthquake-induced landslides.

Although not a major concern for Fontana (see Appendix E – Map 12), the southern Jurupa hillside areas of the city and the San Bernardino National Forest are subject to landslide potential.

4.6.5 Frequency/Probability of Future Occurrences

Landslides are not a major concern in the City of Fontana. They are more likely to occur after a significant earthquake, but a landslide has never been reported in the city. The only areas susceptible to landslides are the southern Jurupa hillside and the northern part of the city close

to the San Bernardino National Forest, but there is a low probability of this hazard affecting these areas in the future.

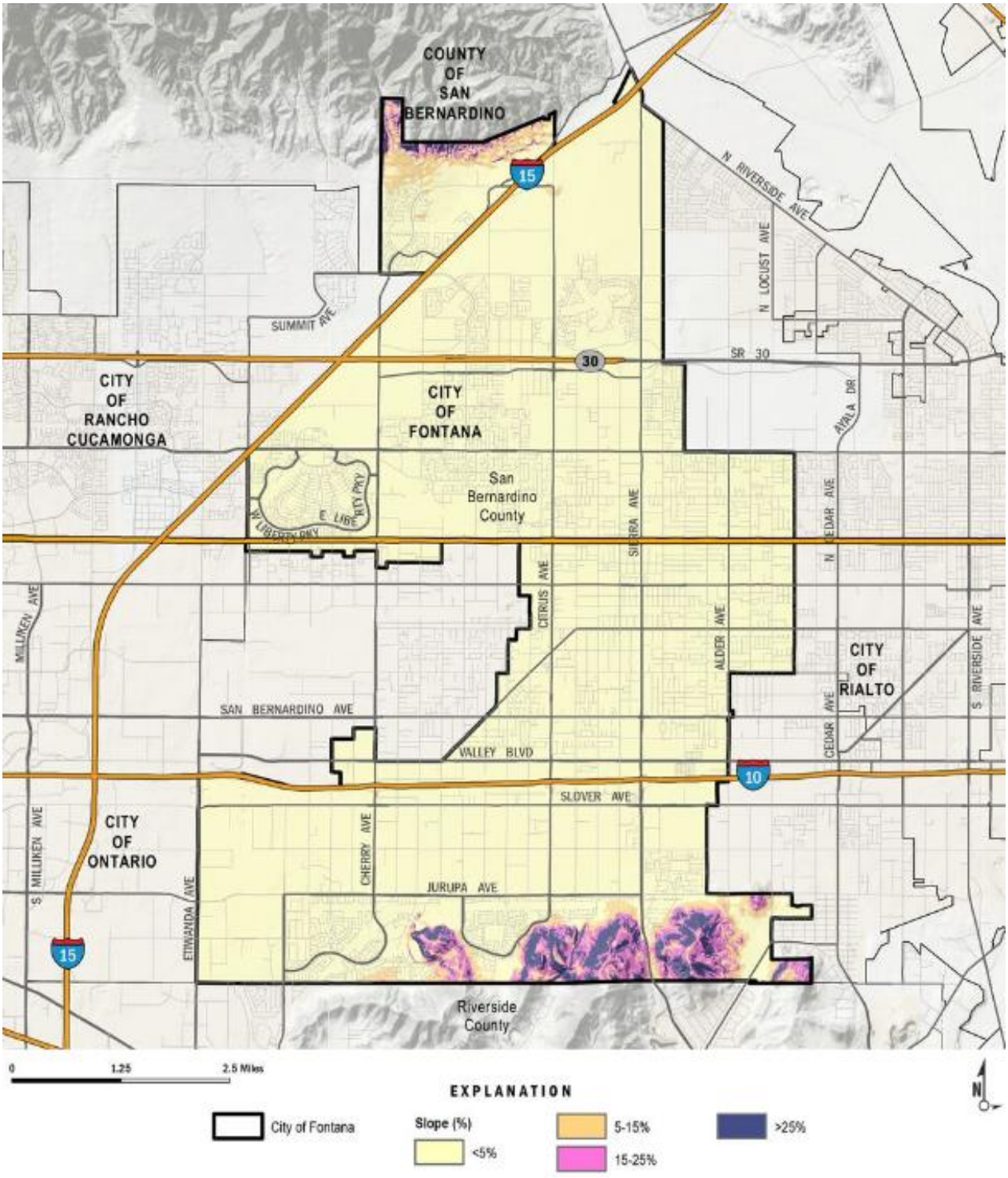


Figure 4-12: Slope of Land in San Bernardino County

Source: USGS National Elevation Dataset



Figure 4-13: Landslide Hazard Susceptibility

Source: California Geologic Survey

4.7 Climate Change



Climate change refers to any distinct change in measures of climate lasting for a long period of time, more specifically major changes in temperature, rainfall, snow, or wind patterns. Climate change may be limited to a specific region, or may occur across the whole Earth. Climate change may result from:

- Natural factors (e.g., changes in the Sun's energy or slow changes in the Earth's orbit around the Sun);
- Natural processes within the climate system (e.g., changes in ocean circulation); and
- Human activities that change the atmosphere's make-up (e.g., burning fossil fuels) and the land surface (e.g., cutting down forests, planting trees, building developments in cities and suburbs, etc.).

The effects of climate change are varied: warmer and more varied weather patterns, melting ice caps, and poor air quality, for example. As a result, climate change impacts a number of natural hazards.

The 2013 State of California Multi-Hazard Mitigation Plan stated that climate change is already affecting California. Sea levels have risen by as much as seven inches along the California coast over the last century, increasing erosion and pressure on the state's infrastructure, water supplies, and natural resources. The State has also seen increased average temperatures, more extreme hot days, fewer cold nights, a lengthening of the growing season, shifts in the water cycle with less winter precipitation falling as snow, and both snowmelt and rainwater running off sooner in the year. In addition to changes in average temperatures, sea level, and precipitation patterns, the intensity of extreme weather events is also changing.

4.7.1 Regulatory Environment

California's response to climate change is directed by Legislation and Regulations and by other Mandates such as executive orders.

4.7.2 City of Fontana 2017 General Plan

The 2017 City of Fontana General Plan includes a Sustainable Development Element which includes the concept of Environmental Sustainability. Environmental sustainability is defined as the ability of the environment to continue to properly function indefinitely. The element establishes goals and policies in the categories of energy, waste reduction, urban design, urban nature, transportation, environmental health, water and energy efficient city buildings and facilities.

4.7.3 The Sustainable Communities and Climate Protection Act of 2008

The Sustainable Communities and Climate Protection Act of 2008 (Sustainable Communities Act, SB 375, Chapter 728, Statutes of 2008) looks to reduce GHG emissions through coordinated

transportation and land use planning with the goal of more sustainable communities. Regional targets are established for GHG emissions reductions from passenger vehicle use by the sustainable communities strategy (SCS) established by each metropolitan planning organization (MPO). The SCS is an integral part of the regional transportation plan (RTP) and contains land use, housing, and transportation strategies to meet GHG reductions targets. In San Bernardino County, the South Coast Air Quality Management District facilitates compliance with the federal Clean Air Act and implements the state's air quality program.

The Office of Planning and Research's General Plan Guidelines and SB 375 builds upon Assembly Bill 162 (flood protection) and Senate Bill 1241 (fire protection) and supports Safeguarding California implementation.

SB 375 also supports Assembly Bill 2140 which requires that a City/County General Plan contains a safety element in addition to a Hazard Mitigation Plan. AB 2140 also requires a vulnerability assessment, adaptation goals, policies and objectives, and a set of feasible implementation measures.

4.7.3.1 2016 California Building Efficiency Standards

By adopting the 2016 California Building Code, the City has also adopted the 2016 Building Energy Efficiency Standards Title 24, Part 6. The Standards contain energy and water efficiency requirements (and indoor air quality requirements) for newly constructed buildings, additions to existing buildings, and alterations to existing buildings. Public Resources Code Sections 25402 subdivisions (a)-(b) and 25402.1 emphasize the importance of building design and construction flexibility by requiring the Energy Commission to establish performance standards, in the form of an "energy budget" in terms of the energy consumption per square foot of floor space. For this reason, the Standards include both a prescriptive option, allowing builders to comply by using methods known to be efficient, and a performance option, allowing builders complete freedom in their designs provided the building achieves the same overall efficiency as an equivalent building using the prescriptive option. Reference Appendices are adopted along with the Standards that contain data and other information that helps builders comply with the Standards. (California Energy Commission, 2016)

4.7.3.2 California Adaptation Planning Guide (APG)

The State of California has been taking action to address climate change for over 20 years, focusing on both greenhouse gas emissions reduction and adaptation. The California Adaptation Planning Guide (APG) continues the state's effort by providing guidance and support for communities addressing the unavoidable consequences of climate change.

Based on upon specific factors, 11 Climate impact regions were identified. Some of the regions were based on specific factors particularly relevant to the region. As illustrated in Figure 4-14 San Bernardino County is located in the Desert Region.

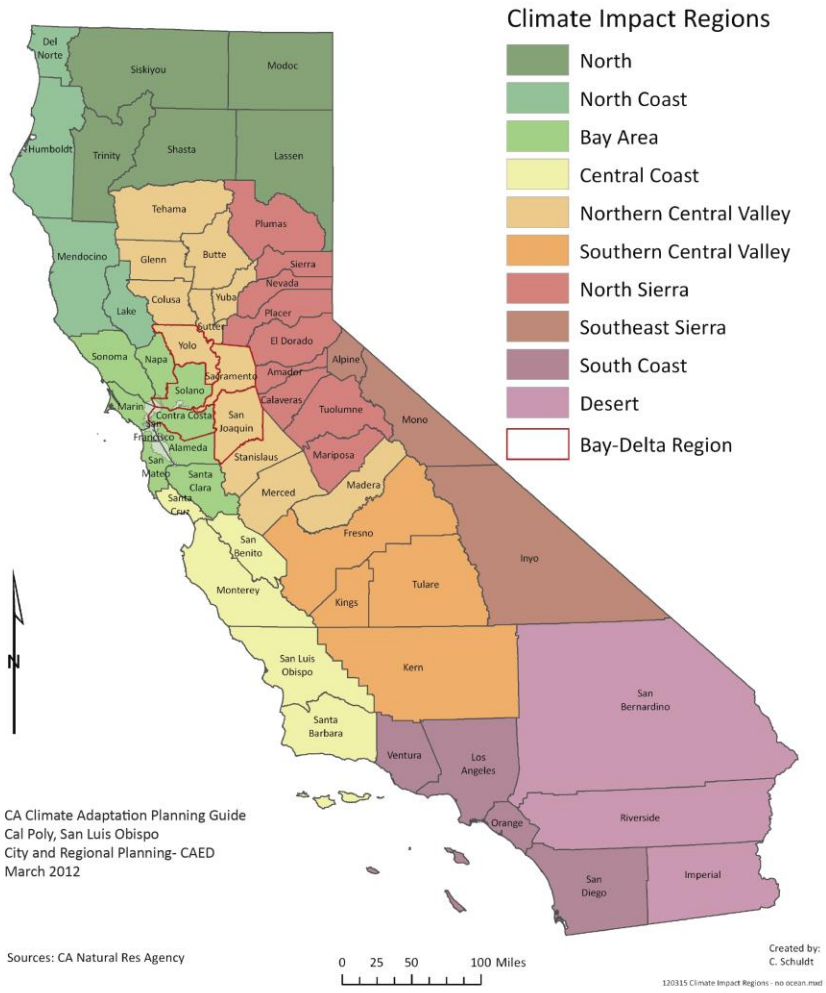


Figure 4-14: Climate Impact Regions

Source: California Natural Resources Agency

The Desert is a heavily urbanized inland region (4.3+ million people) made up of sprawling suburban development in the west near the South Coast region and vast stretches of open, largely federally owned desert land to the east. Prominent cities within the desert portion include Palm Springs (44,500+) and El Centro (42,500+). The region's character is defined largely by the San Gabriel Mountains, San Gorgonio Mountains, San Jacinto Mountains, and smaller inland mountains reaching through the desert to the Colorado River, which borders the region on the east. Communities in the Desert region should consider evaluating the following climate change impacts:

- Reduced water supply
- Increased temperature
- Reduced precipitation
- Diminished snowpack
- Wildfire risk
- Public health and social vulnerability

- Stress on special-status species

4.7.4 Past Occurrences

Climate change has never been directly responsible for any declared disasters. Past flooding, wildfire, levee failure, and drought disasters may have been exacerbated by climate change, but it is impossible to make direct connections to individual disasters. In addition, unlike earthquake and floods that occur over a finite time period, climate change is an on-going hazard, the effects of which some are already experiencing. Other effects may not be seriously experienced for decades, or may be avoided altogether by mitigation actions taken today.

According to the California State Hazard Mitigation Plan (SLHMP), the worst single heat wave event in California occurred in Southern California in 1955, when an eight-day heat wave resulted in 946 deaths. The July 2006 heat wave in California caused approximately 140 people deaths over a 13-day period.

4.7.5 Location/Geographic Extent

The effects of climate change are not limited by geographical borders. San Bernardino County, the State of California, the United States, and the rest of the world are all at risk to climate change. As such, the entire County is at risk to the effects of climate change.

Figure 4-15 and Figure 4-16 provide Cal Adapt[4] modeled decadal July high temperature averages for 2010 and 2090. These figures provide current decade-long July temperature averages and possible annual high heating trends for the remaining portion of the century. The data presented in the figures represent a "projection" of potential future climate scenarios, they are not predictions. These figures illustrate how the climate may change based on a variety of different potential social and economic factors. The visualizations are comprised of average values from Coupled Climate model 2.1 (GFDL), Community Climate System Model Version 3 (CCSM3), Coupled Global Climate Model Version 3 (CNRM) and Parallel Climate Model 1 (PCM1). During the next few decades, scenarios project average temperature to rise between 1° and 2.3°F; however, the projected temperature increases begin to diverge at mid-century so that, by the end of the century, the temperature increases projected in the higher emissions scenario (A2) are approximately twice as high as those projected in the lower emissions scenario (B1). Customizable maps can be viewed at http://cal-adapt.org/temperature/decadal/

[4] Cal-Adapt has been funded to provide access to data and information that has been produced by the State's scientific and research community. The data available in this site offer a view of how climate change might affect California at the local level.



Figure 4-15: July Decadal Average High Temperature Map; 2010

Source: Cal-Adapt

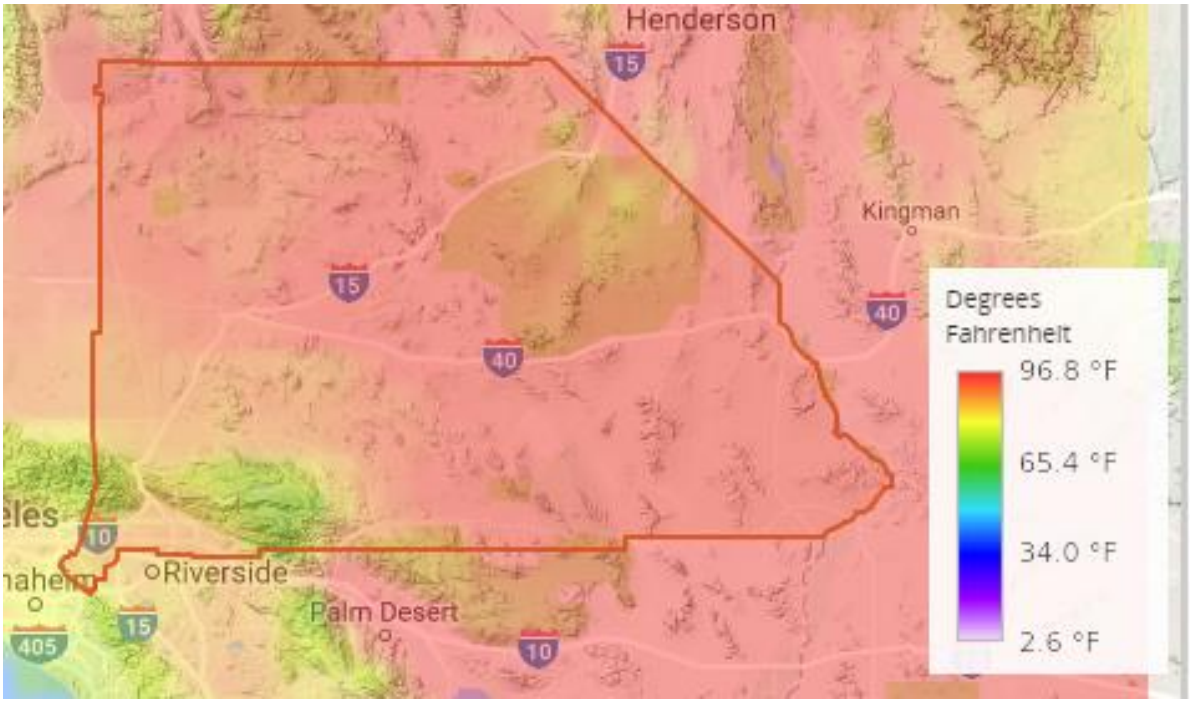


Figure 4-16: July Decadal Average High Temperature Map; 2090

Source: Cal-Adapt

4.7.6 Magnitude/Severity

The California Adaptation Planning Guide has calculated projections for changes in temperature, precipitation, heat waves, snowpack and wildfire risk in the desert area, as shown in Table 4-8. Hotter, drier conditions are expected to exist in the desert area, increasing the risk for other natural hazards.

Effect	Range
Temperature Change, 1990-2100	January increase in average temperatures: 2°F to 4°F by 2050 and 5°F to 8°F by 2100 July increase in average temperatures: 3°F to 5°F by 2050 and 6°F to 9°F by 2100 (Modeled high temperatures; high carbon emissions scenario)
Precipitation	Generally, annual rainfall will decrease in the most populous areas. Wetter areas like the western part of Riverside and southwestern San Bernardino counties will experience a 2 to 4 inch decline by 2050 and 3.5 to 6 inch decline by the end of the century. Big Bear is expected to lose around 8 inches per year by 2090. Southern Imperial County will have a small decline of about 0.5 inches. The eastern, desert portion of the region will see little to no change in annual rainfall. (CCSM3 climate model; high carbon emissions scenario)
Heat Wave	Heat waves are defined by five consecutive days over temperatures in the 100s over most of the region. Three to five more heat waves will be experienced by 2050, increasing to 12 to 16 in the western parts of the region to more than 18 to 20 in the eastern parts of the region.
Snowpack	March snowpack in the Big Bear area will diminish from the 2.5- inch level of 2010 to 1.4 inches in 2030 and almost zero by 2090. (CCSM3 climate model; high emissions scenario)
Wildfire Risk	Most areas are projected to have the same or slightly increased likelihood of wildfire risk. The major exceptions are the Mecca San Gorgonio and San Jacinto Mountains, where wildfire will be 1.5 and 2.0 times more likely. (GFDL model, high carbon emissions scenario)

Table 4-8: From APG: Table 41. Summary of Cal-Adapt Climate Projections for the Desert Region

[Public Interest Energy Research, 2011. Cal-Adapt. Retrieved from http://cal-adapt.org]

The California Climate Adaptation Strategy (CAS), citing a California Energy Commission study, states that "over the past 15 years, heat waves have claimed more lives in California than all other declared disaster events combined." This study shows that California is getting warmer, leading to an increased frequency, magnitude, and duration of heat waves. These factors may lead to increased mortality from excessive heat, as shown in Figure 4-17.

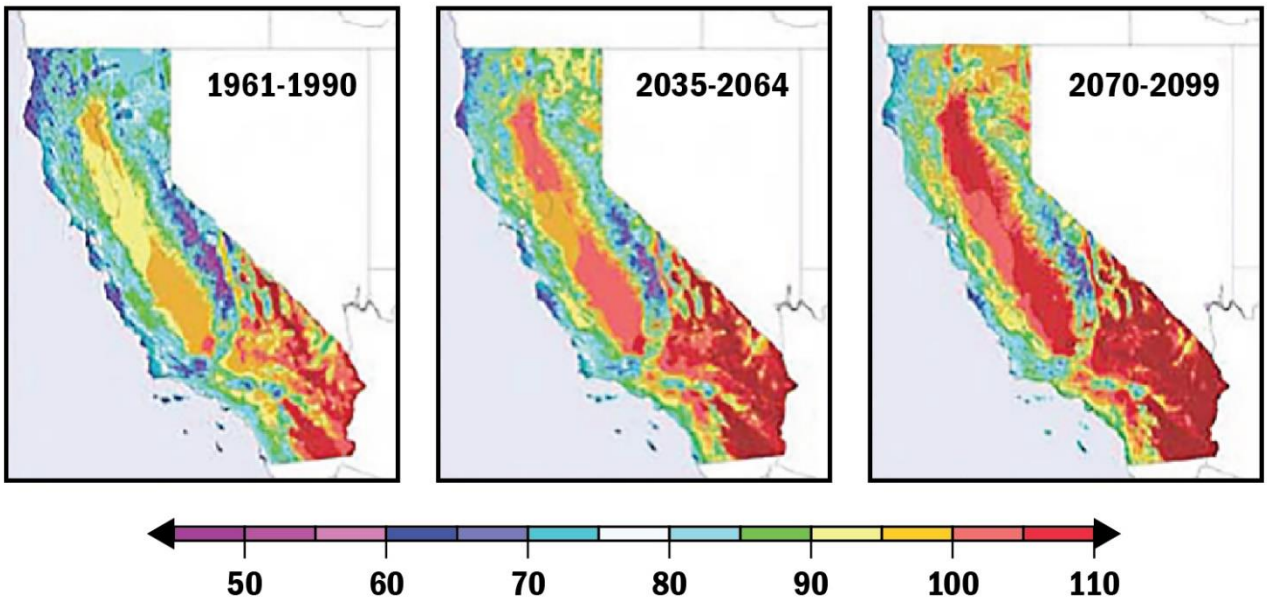


Figure 4-17: California Historical and Projected Temperature Increases - 1961 to 2099

Source: Dan Cayan; California Climate Adaptation Strategy

4.7.7 Frequency/Probability of Future Occurrences

Climate change is one of the few natural hazards where the probability of occurrence is influenced by human action. In addition, unlike earthquake and floods that occur over a finite time period, climate change is an on-going hazard.

The 2009 Climate Adaptation Strategy (CAS) delineated how climate change may impact and exacerbate natural hazards in the future, including wildfires, extreme heat, floods, drought, and levee failure:

- Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in the City of Fontana and the rest of California, which are likely to increase the risk of mortality and morbidity due to heat-related illness and exacerbation of existing chronic health conditions. Those most at risk and vulnerable to climate-related illness are the elderly, individuals with chronic conditions such as heart and lung disease, diabetes, and mental illnesses, infants, the socially or economically disadvantaged, and those who work outdoors.
- The Desert region relies on water from the Colorado River and the State Water Project. Both of these sources begin with mountain snowpack. Climate change will result in drastically reduced supply from these sources. Declining snowpack in the San Gabriel Mountains, San Gorgonio Mountains, and San Jacinto Mountains will lead to permanently diminished local water supply.

- Higher temperatures will melt the snowpack earlier and drive the snowline higher, resulting in less snowpack to supply water to California users.
- Droughts are likely to become more frequent and persistent in the 21st century.
- Intense rainfall events, periodically ones with larger than historical runoff, will continue to affect California with more frequent and/or more extensive flooding.
- Storms and snowmelt may coincide and produce higher winter runoff. Together, these changes will increase the probability of dam and levee failures in the San Bernardino County Flood Control District.
- Warmer weather, reduced snowpack, and earlier snowmelt can be expected to increase wildfire risk through fuel hazards and ignition risks. These changes can also increase plant moisture stress and insect populations, both of which affect forest health and reduce forest resilience to wildfires. An increase in wildfire intensity and extent will increase public safety risks, property damage, fire suppression and emergency response costs to government, watershed and water quality impacts, vegetation conversions and habitat fragmentation.

4.7.8 Planned Development

The City of Fontana has adopted a General Plan that provides a foundation on which all development and future programs that address climate change are built upon. Additionally, the Municipal Code provides for development that is consistent with the 2016 California Building Efficiency Standards.

4.7.9 Goals, Policies, and Objectives

The City of Fontana General Plan Safety Element and the Sustainability and Resilience Element contains goals, policies and objectives that are required to be met with any future development or regeneration of existing buildings and structures.

4.7.10 Implementation Measures

The City has established a “Sustainable Fontana” program to coordinate City government resource-efficiency efforts and promote private initiatives and opportunities. The City will continue collaboration with the San Bernardino County Transportation Authority (SBCTA), infrastructure agencies, and other regional agencies to continue compliance in reaching and exceeding current and future state goals for greenhouse gas reductions and energy efficient regulations.

4.7.11 Drought Hazard Profile

Drought is a normal, recurrent feature of climate. It occurs almost everywhere, although its features vary from region to region. Drought severity depends on numerous factors, including duration, intensity, and geographic extent, as well as regional water supply demands by humans and vegetation. The severity of drought can be aggravated by other climatic factors, such as prolonged high winds and low relative humidity.

Drought originates from a deficiency of precipitation over an extended period, usually one or more seasons. Drought can result in a water shortage for some activity, group, or environmental sector. Drought is a complex natural hazard, which is reflected in the following four definitions commonly used to describe it:

• Agricultural – drought is defined principally in terms of naturally occurring soil moisture deficiencies relative to water demands of plant life, usually arid crops.

• Hydrological – drought is related to the effects of precipitation shortfalls on stream flows and reservoir, lake, and groundwater levels.

• Meteorological – drought is defined solely on the degree of dryness, expressed as a departure of actual precipitation from an expected average or normal amount based on monthly, seasonal, or annual time scales.

• Socioeconomic – drought associates the supply and demand of economic goods or services with elements of meteorological, hydrologic, and agricultural drought. Socioeconomic drought occurs when the demand for water exceeds the supply as a result of weather-related supply shortfall. It may also be called a water management drought.

Although climate is a primary contributor to hydrological drought, other factors such as changes in land use (e.g., deforestation), land degradation, and the construction of dams all affect the hydrological characteristics of the basin. Since regions are interconnected by hydrologic systems, the impact of meteorological drought may extend well beyond the borders of the precipitation-deficient area. Similarly, changes in land use upstream may alter hydrologic characteristics such as infiltration and runoff rates, resulting in more variable streamflow and a higher incidence of hydrologic drought downstream. Land use change is one of the ways human actions alter the frequency of water shortage even when no change in the frequency of meteorological drought has been observed.

4.7.11.1 Regulatory Environment

The City of Fontana and the County of San Bernardino have a number of regulatory requirements and documents that address planning for drought. This includes Watershed Water Quality Management Plans (WQMP) for the City of Fontana. On November 24, 2015, the City Council for the City of Fontana, adopted and approved Ordinance No. 1734 approved the revised Technical Guidance Document for Water Quality Management Plan (TGD-WQMP).

The 1972 Federal Water Pollution Control Act, also known as the Clean Water Act (CWA) provides the basis for the protection of all inland surface waters, estuaries, and coastal waters. California's Porter-Cologne Water Quality Control Act of 1970 established the Regional Water Quality Control Board as the agency responsible for implementing the CWA and Porter Cologne requirements in the Santa Ana Watershed.

In 2006, California State lawmakers adopted AB 1881, which requires cities and counties to adopt ordinances that necessitate efficiency of water use in new and existing urban irrigated landscapes in California. This provided guidelines and timelines for the revision of the State's Model Water Efficient Landscape Ordinance (MWELO) and mandated that every city, county or other agency within the State adopt MWELO or be in compliance with it through their own ordinance. On November 24, 2015, the San Bernardino County Water Efficient Landscape Ordinance was implemented.

Technical Guidance Document for Water Quality Management Plan (TGD-WQMP)

In September of 2016, the City of Fontana implemented a Water Quality Management Plan Handbook that provides guidance and direction for project proponents on the regulatory requirements applicable to a private or public development activity, including public works transportation projects, from project conception to completion.

4.7.11.2 Historical Occurrences

The 2013 California State MLHMP states that from 1950 to 2012, there has been eight-drought State Emergency Proclamations in California. Specifically for San Bernardino County, there have been six drought events since 1896. Previous occurrences of drought are described as follows:

- 1975 to 1977: California experienced the two driest years (1976 and 1977) in the State's history in 1976 and 1977. The drought was declared an Emergency (FEMA-EM-3023) on January 20, 1977. Total crop damages statewide totaled $2.67 billion dollars for both years ($888.5 million in 1976 and $1.8 billion in 1977).

- 2006 to 2009: A California State-declared three-year drought of below-average rainfall, low snowmelt runoff, and the largest court-ordered water restricting in state's history. The dry conditions damaged crops, deteriorated water quality, and caused extreme wildfire danger. Approximately $300 million in agricultural revenue loss, and a potential $3 billion in economic losses over time.
- 2012 to 2016: San Bernardino County first declared a local drought emergency in 2014. This ongoing drought is the most severe drought in over 100 years. In order to abide by the State Water Resources Control Board's mandatory water reductions, the San Bernardino Municipal Water Department Board of Water Commissioners authorized implementation of Stage IIA of the department's Water Supply Contingency Plan on June 1, 2015. The State Water Board will adjust emergency water conservation regulations through the end of January 2017, in recognition of the differing water supply conditions across the state, and develop proposed emergency water restrictions for 2017 if the drought persists.

Additional information about previous occurrences of droughts in California (in general) can be obtained from the California DWR.

4.7.11.3 Location/Geographic Extent

Drought can affect the County, region, and the State of California as a whole. The County's primary source of water is imported by the San Bernardino Valley Municipal Water District through participation in the State Water Project (SWP). This supply is supplemented by groundwater basins in the County. Drought has no defined geographical boundaries and cannot be depicted in map form. As such, the entire County is subject to drought.

4.7.11.4 Magnitude/Severity

The magnitude of drought is usually measured in time and the severity of the hydrologic deficit. There are several resources available to evaluate drought status and estimate future expected conditions. The National Integrated Drought Information System (NIDIS) Act of 2006 (Public Law 109-430) prescribes an interagency approach for drought monitoring, forecasting, and early

warning. The NIDIS maintains the U.S. Drought Portal (www.drought.gov) which is a web-based access point to several 71 drought related resources. Resources include the U.S. Drought Monitor (USDM) and the U.S. Seasonal Drought Outlook (USSDO).

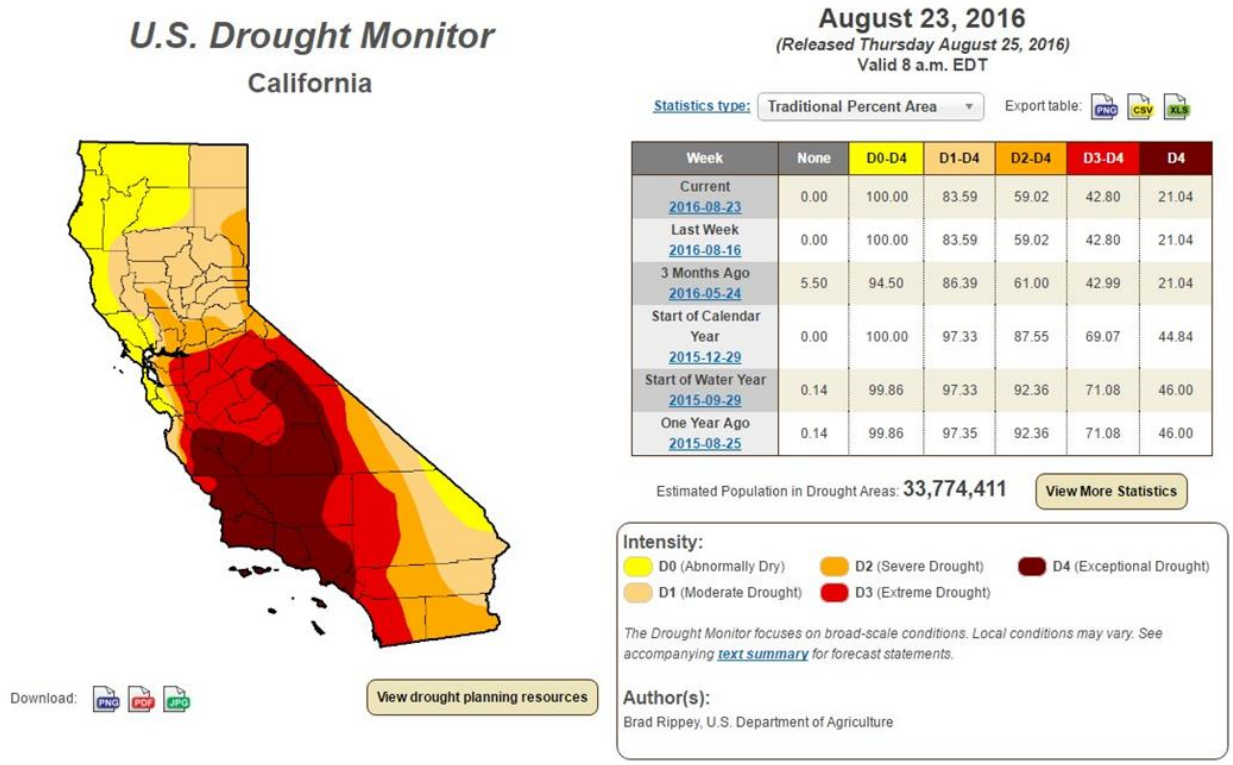


Figure 4-18: US Drought Monitor Map for the State of California on August 23, 2016

Source: U.S. Department of Agriculture

The USDM provides a summary of drought conditions across the United States and Puerto Rico and is developed and maintained by the National Drought Mitigation Center (www.drought.unl.edu). USDM includes the U.S. Drought Monitor Map. This map is updated weekly by combining a variety of drought database and indicators, and local expert input into a single composite drought indicator. The map denotes four levels of drought intensity (ranging from D1 - D4) and one level of "abnormal dryness" (D0). In addition, the map depicts areas experiencing agricultural (A) or hydrological (H) drought impacts. These impact indicators help communicate whether short- or long-term precipitation deficits are occurring. An example Drought Monitor Map for the State of California for August 23, 2016 is illustrated in Figure 4-18. The USSDO, shown in Figure 4-19 is a three-month projection of potential drought conditions developed by the National Weather Service's Climate Prediction Center.

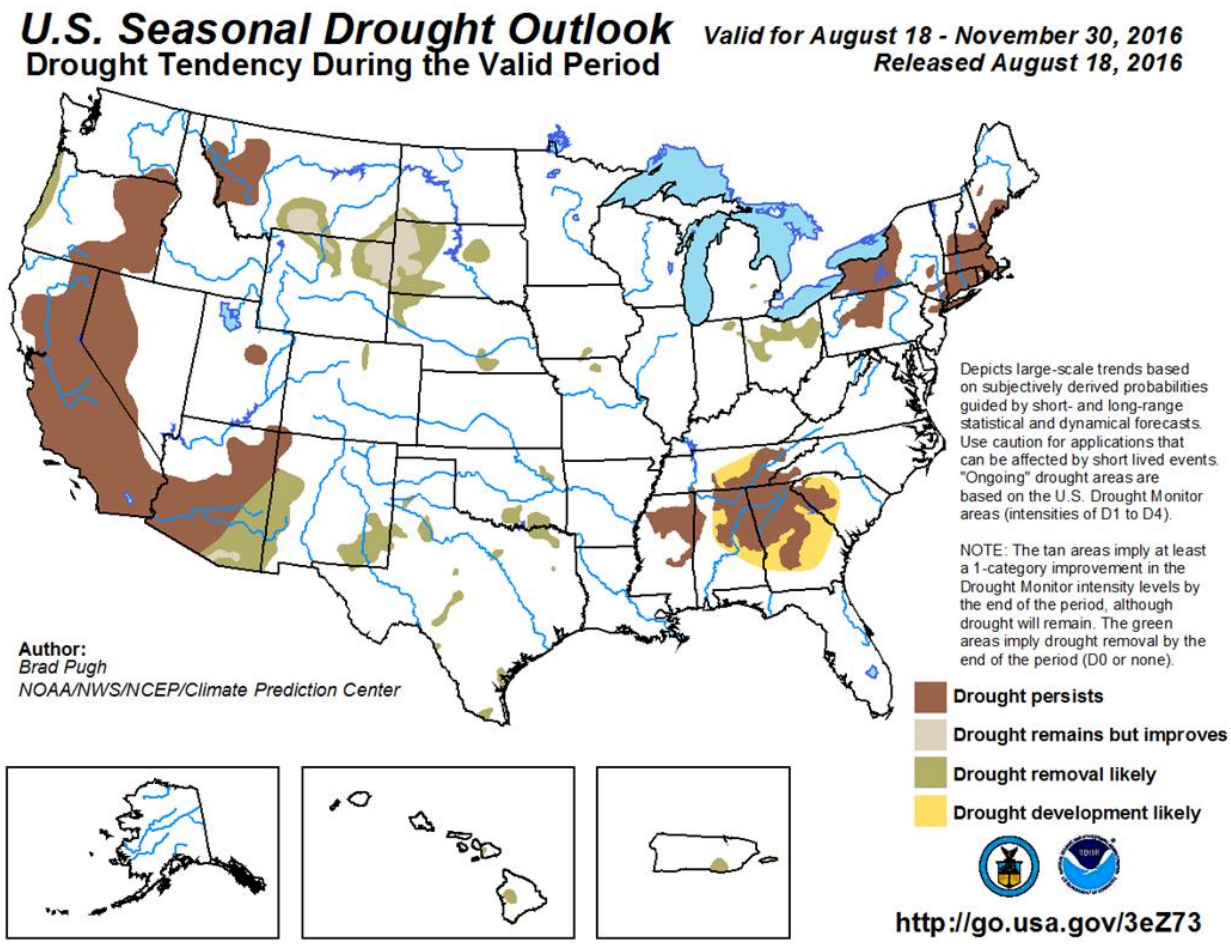


Figure 4-19: USSDO Drought Tendency Map (Valid August 18- November 30, 2016)

Source: go.USA.gov

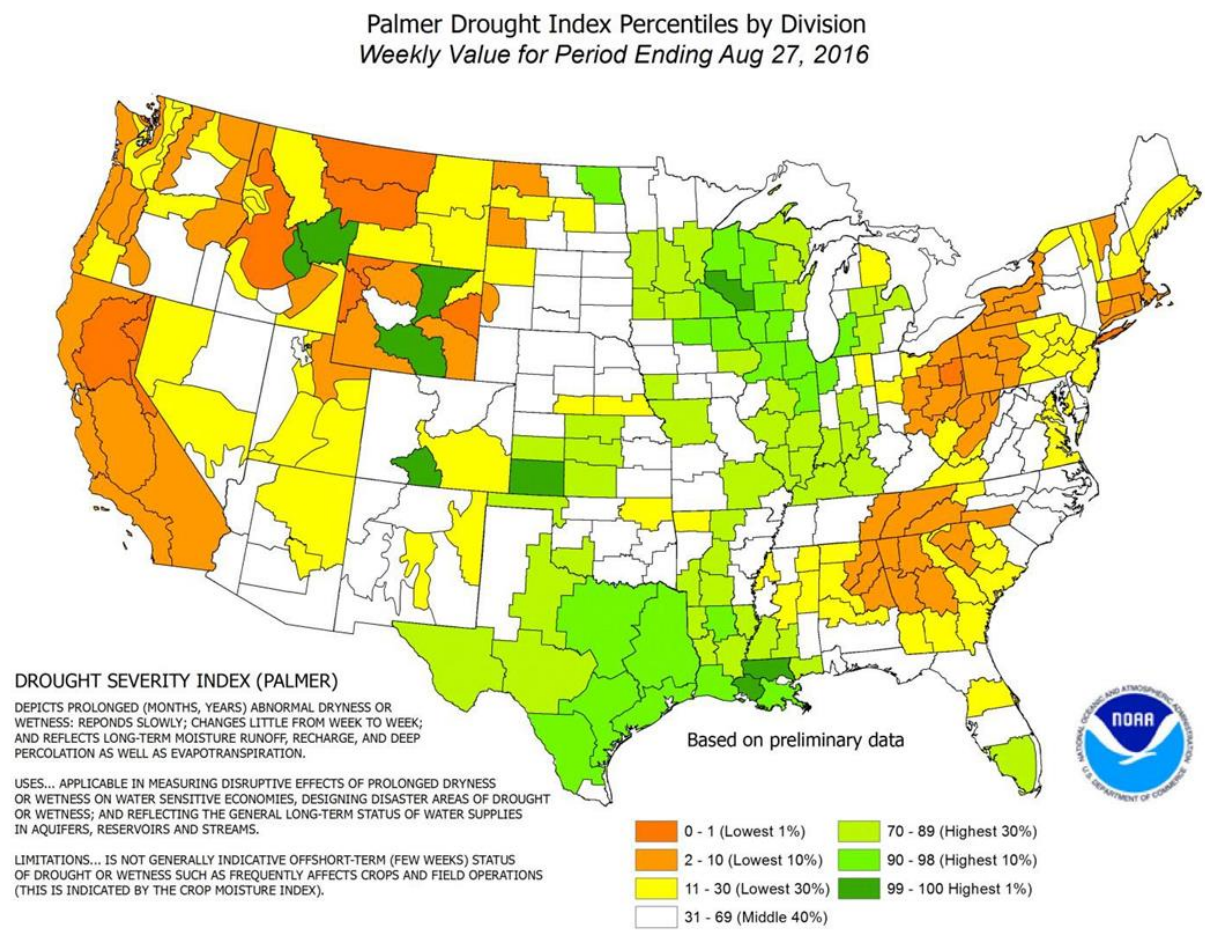


Figure 4-20: Month SPI through the end of August 2016 for San Bernardino County

Source: cpc.ncep.noaa.gov

The Vegetation Drought Response Index, or VegDRI, is a bi-weekly depiction of vegetation stress across the contiguous United States. VegDRI is a fine resolution (1-km2) index based on remote sensing data, and incorporates climate and biophysical data to determine the cause of vegetation stress. Development of the VegDRI map and associated products is a joint effort by the National Drought Mitigation Center (NDMC), the U.S. Geological Survey's (USGS) National Center for Earth Resources Observation and Science (EROS), and the High Plains Regional Climate Center (HPRCC). Figure 4-21 illustrates the VegDRI results for Southern California for August 21, 2016.

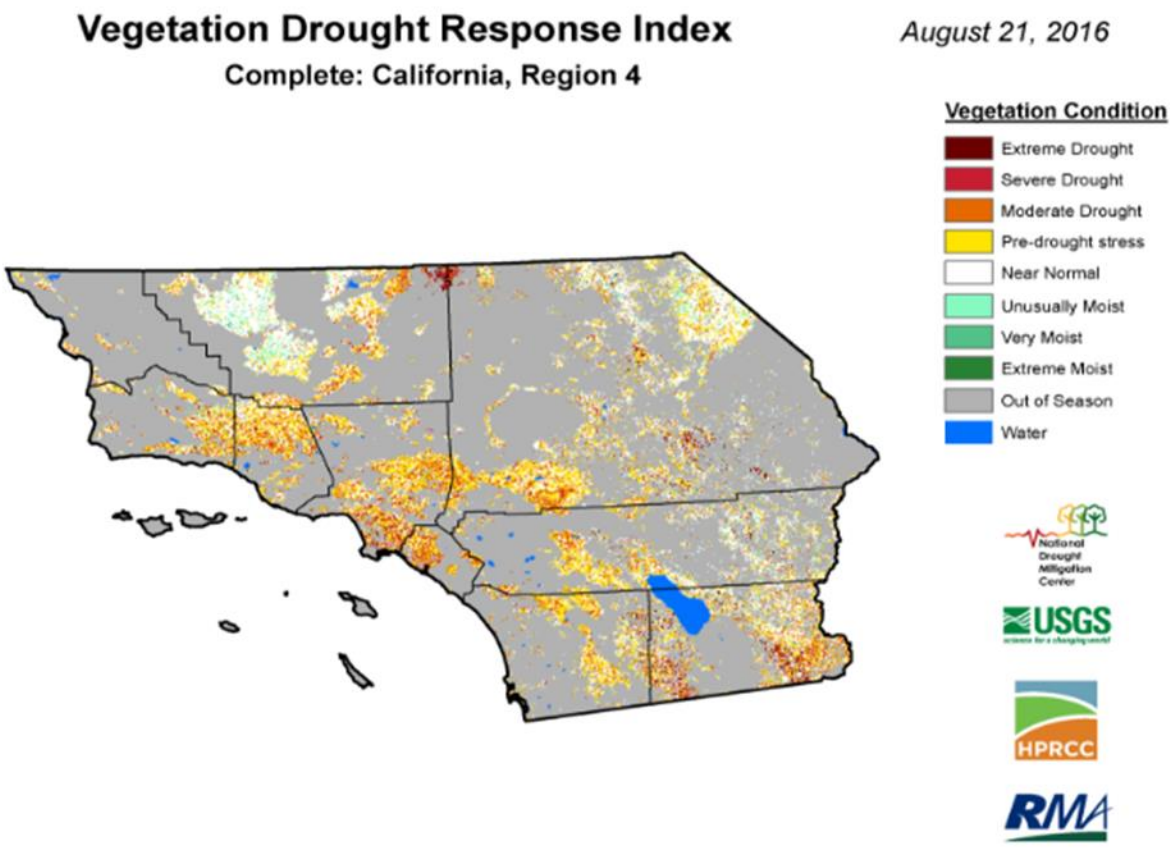


Figure 4-21: Vegetation Drought Response index - California Region 4 for August 21, 2016

Source: http://vegdri.unl.edu/

4.7.11.5 Frequency/ Probability of Future Occurrences

Currently there is no data on the probability of drought that would be comparable to the USGS effort on earthquakes in the region, or how 100-year flood maps are created. However, according to the 2012 Solano County EOP, drought cycles occur every 7 to 11 years in Vacaville and Solano County as a whole.

4.7.11.6 Vulnerability

Drought should not be viewed as merely a physical phenomenon or natural event. Its impacts on society result from the interplay between a natural event (less precipitation than expected resulting from natural climatic variability) and the demand people place on water supply.

Due to lack of defined geographical boundaries, the vulnerability assessment for drought differs from other natural hazards. The impacts of drought can be categorized as economic, environmental, or social. Many economic impacts occur in agriculture and related sectors, including forestry and fisheries, because of the reliance of these sectors on surface and subsurface water supplies. In addition to obvious losses in yields in crop and livestock production, drought is associated with increases in insect infestations, plant disease, and wind erosion. Droughts also bring increased problems with insects and diseases to forests and reduce growth.

The incidence of forest and range fires increases substantially during extended droughts, which in turn places human and wildlife populations, buildings, infrastructure and critical facilities, at higher levels of risk.

Income loss is another indicator used in assessing the impacts of drought because so many sectors are affected. Reduced income for farmers has a ripple effect. Retailers and others who provide goods and services to farmers face reduced business. This leads to unemployment, increased credit risk for financial institutions, capital shortfalls, and loss of tax revenue for local, state, and federal government. Less discretionary income affects the recreation and tourism industries. Prices for food, energy, and other products increase as supplies are reduced. In some cases, local shortages of certain goods result in the need to import these goods from outside the stricken region.

4.7.11.7 Loss Estimation Results

No standardized methodology exists for estimating losses due to drought. Drought does not generally have a direct impact on critical and non-critical facilities and building stock. Instead, drought vulnerability is primarily measured by its potential impact to sectors of the County's economy and natural resources. In San Bernardino County some of the potential impacts to the economy include the following:

- Reduced agricultural and livestock production
- Loss of timber from increased wildfires
- Decreased municipal and industrial water supply
- Loss of recreation/tourism
- Decreased wildlife and wildlife habitat

4.7.11.8 Statewide Mandatory Water Reductions

Recognizing persistent, yet less severe, drought conditions throughout California, on May 18, 2016 the State Water Resources Control Board adopted an emergency water conservation regulation requiring locally developed conservation standards based upon each water supplier's specific circumstances. It replaces the prior percentage reduction-based water conservation standard. In San Bernardino County, each water wholesaler (San Gabriel Water Agency) was required to calculate the supply of water for the next three years, considering drought conditions persist. Each water supply retailer subsequently self-certified the expected demand on water resources, determining whether or not there is sufficient supply to meet demand. Our Department certified that there is sufficient water supply to meet the demand over the next three years; however, due to ongoing drought conditions in the region, water conservation efforts should continue.

4.7.11.8.12015 San Bernardino Valley Regional Urban Water Management Plan

This Urban Water Management Plan provides a summary of anticipated supplies and demands for the years 2015-2040 for the agencies participating in the plan, including San Gabriel Valley Water District (Fontana Water Company), Cucamonga Valley Water District, West Valley Water District, Marygold Mutual Water Company, and Crawford Canyon Mutual Water Company, who all service the City of Fontana. The Urban Water Management Plan Act requires evaluation of the following:

- Whether supplies will be sufficient to meet demands during the following hydrologic year types:
    - Normal/average year
    - Single dry year
    - Multiple dry year sequence;
- Existing baseline water use in terms of gallons per capita per day (GPCD) (applies only to retail water suppliers);
- Targets for future water use consistent with the Water Conservation Act of 2009 (SB X7-7) which seeks a 20 percent reduction in per capita water use by 2020;
- Demand Management Measures (DMMs) implemented or planned for implementation as well as the methods proposed for achieving future water use targets;
- Water shortage contingency planning; and
- Notification and coordination with other water agencies, land use entities, and the community.

4.7.11.8.2Water Shortage Contingency Plan

In 1987, Fontana Water Company (FWC) started and maintained various funds whereby it can respond to emergencies without waiting for funds from outside sources. FWC has approved a living document known as the “Emergency Preparedness and Response Procedure” in March, 1994 and most recently revised the document in April 2010 and adopted a “Water Shortage Contingency Plan” in July of 2014. It should be noted that the Fontana Water Company is a division of the San Gabriel Valley Water Department.

4.8 Terrorism Profile



There is no single, universally accepted definition of terrorism, however, FEMA defines "terrorism" as intentional, criminal, malicious acts. FEMA document 386-7 refers to terrorism specifically as the use of Weapons of Mass Destruction (WMD), including biological, chemical, nuclear, and radiological weapons; arson, incendiary, explosive, and armed attacks; industrial sabotage and intentional hazardous materials releases; and "cyberterrorism."

FEMA developed the Integrated Emergency Management System (IEMS) using an all-hazards approach. While the IEMS was established as an "all-hazard" approach, responding to the threat of terrorism (referred to as counterterrorism) came to be viewed as the responsibility of law enforcement, defense, and intelligence agencies. Furthermore, defensive efforts to protect people and facilities from terrorism (referred to as **antiterrorism**) were generally limited to the government sector, the military, and some industrial interests.

While the term "mitigation" refers generally to activities that reduce loss of life and property by eliminating or reducing the effects of disasters, in the terrorism context it is often interpreted to include a wide variety of preparedness and response actions. For the purposes of this document, the traditional meaning will be assumed; that mitigation refers to specific actions that can be taken to reduce loss of life and property from manmade hazards by **"modifying the built environment"** or antiterrorism to reduce the risk and potential consequences of these hazards.

4.8.1 Antiterrorism Regulatory Environment

Adopted on February 9th, 2012 and updated on October 1st, 2013, United Facilities Criteria (UFC) 4-010-01 defines the United States Department of Defense's (DoD) minimum antiterrorism standards for both new and existing buildings. The document applies to DoD buildings, National Guard buildings, visitor centers and museums, visitor control facilities and expeditionary structures. Historic preservation compliance for implementation of anti-terrorism standards, philosophy, design strategies and assumptions are all taken into account. Site planning, structural design, architectural design, and electrical and mechanical design are discussed in detail in Appendix B. The document is available to the public and be found online.

4.8.2 Counterterrorism Regulatory Environment

After the Waterman Terrorism Incident on December 2nd, 2015 two full time positions with a regional FBI-led terrorist task force (FBI's Joint Terrorism Task Force) were created. These task force officers have the clearance to conduct terrorism investigations in the County. The Task Force includes partners from Homeland Security Investigations (HSI), the San Bernardino Police Department, the San Bernardino County Sheriff's Department, the Riverside County Sheriff's Department, the Ontario Police Department, the Riverside Police Department, the Corona Police Department and the Chino Police Department. For more information regarding the positions, contact the San Bernardino Police Department at (909) 384-5742.

According to the State of California Department of Justice's Anti-terrorism program website, the Anti-terrorism program works with federal, state and local law enforcement agencies to detect, investigate, prosecute, dismantle, prevent and respond to domestic and international terrorist activities.

The State of California Bureau of Security and Investigative Services' Power to Arrest Course includes a Weapons of Mass Destruction (WMD) & Terrorism Awareness section. More information regarding the course can be found in the Bureau of Security and Investigative Services California Code of Regulations. Past Occurrences

There have been two terrorist attacks recorded in San Bernardino County. Table 4-9 describes both attacks.

Date	Perpetrator Group	Fatalities	Injured	Target Type
3/16/1970	White Extremists	0	1	Government (General)
12/2/2015	Unaffiliated Individuals	16	17	Government (General)

Table 4-9: Terrorist Attacks in San Bernardino County

Source: ***Global Terrorism Database***

The state of California has experienced 574 terrorist attacks from 1970-2011 (Integrated United States Security Database (IUSSD): Data on the Terrorist Attacks in the United States Homeland, 1970-2011 2012). Figure 4-22 shows the types of terrorist attacks in the state of California from 1970 to the present.

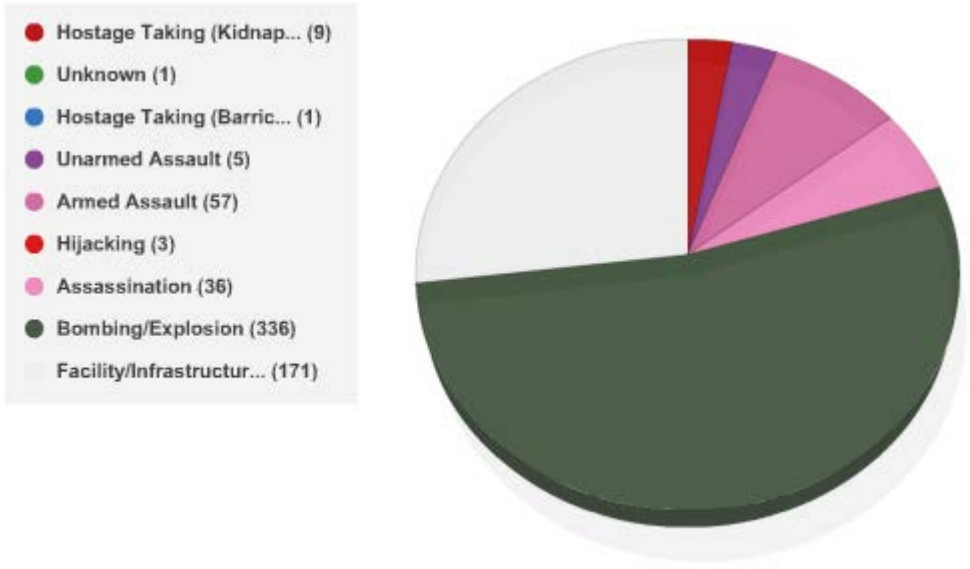
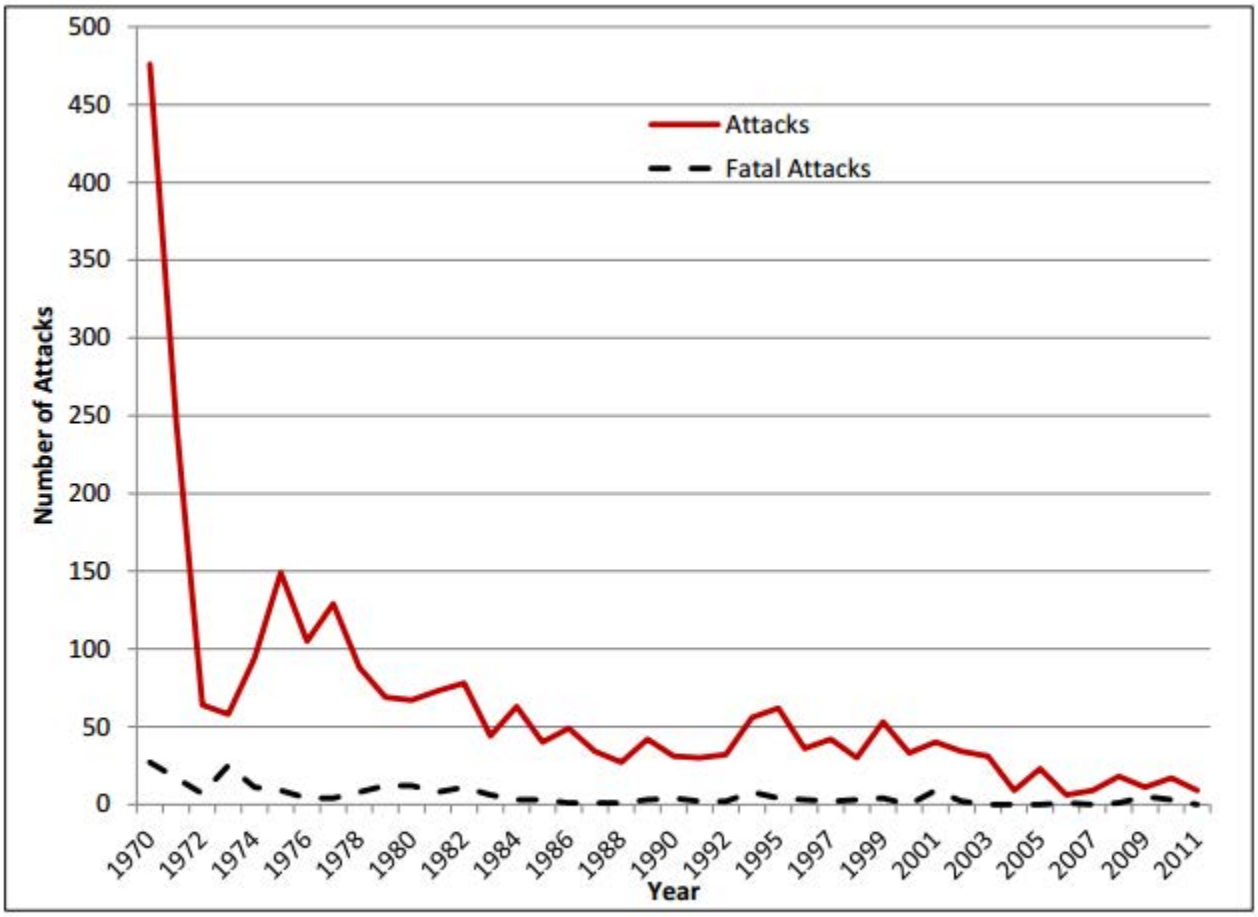


Figure 4-22: Types of Terrorist Attacks in California from 1970- Present

Source: ***Global Terrorism Database***

As seen in Figure 4-23, since 1970, the number of terrorist attacks in the United States has steadily decreased. According to the heritage.org website, most terrorist attacks on America happen outside our nation's borders. The number of international terrorist attacks against the United States from 1970-2011 is shown in Figure 4-24.



Note: There were 2,608 total attacks and 226 fatal attacks between 1970 and 2011.

Source: Nine facts about terrorism in the United States since 9/11, The Washington Post 9/11/2013

Figure 4-23: Total and Fatal Terrorist Attacks in the United States by Year

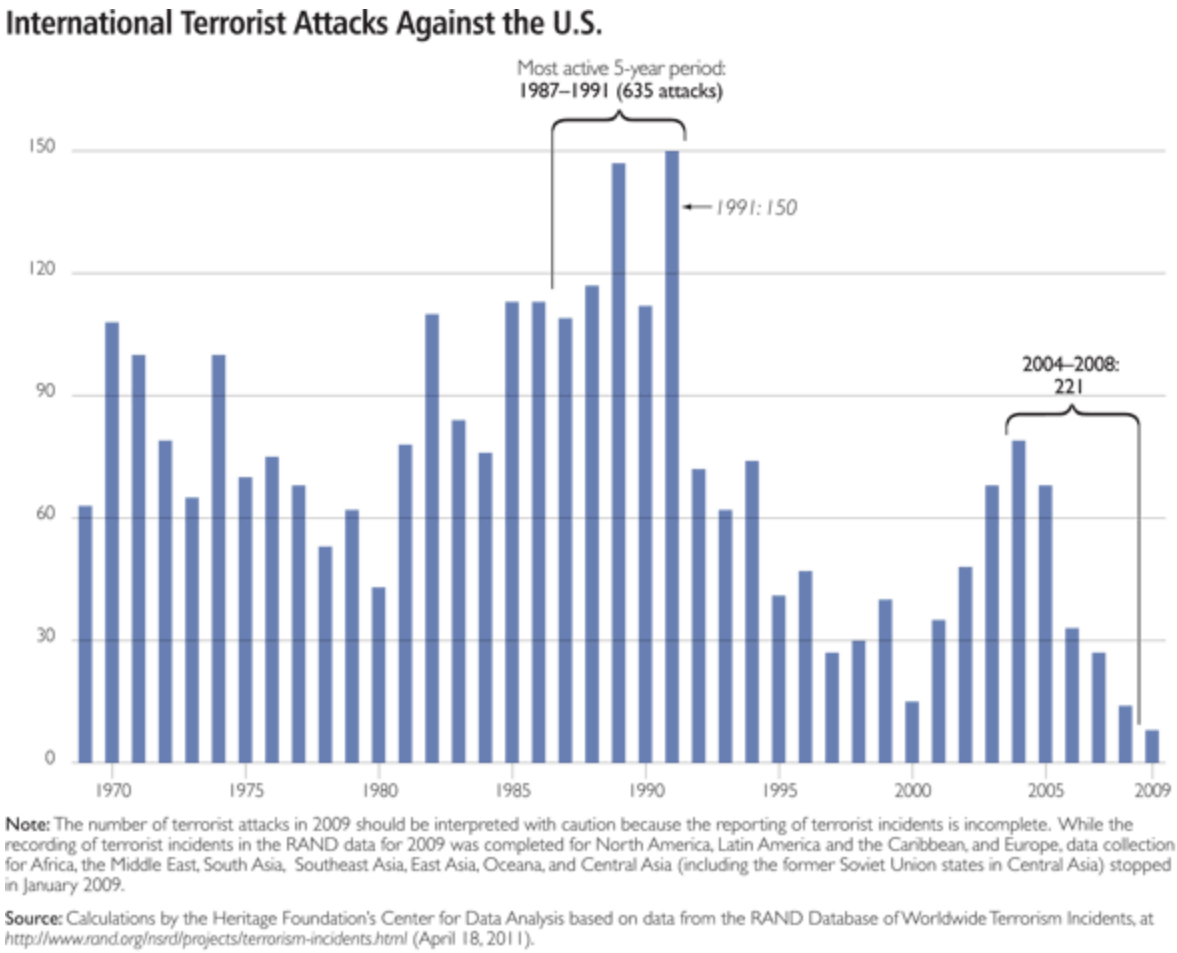


Figure 4-24: International Terrorist Attacks Against the United States

Source: Terror Trends: 40 Years' Data on international and Domestic Terrorism, Heritage.org 5/20/2011

4.8.3 Location/ Geographic Extent

Unlike natural hazards, which often follow patterns and can be forecasted, manmade hazards such as acts of terrorism are much more unpredictable. Terrorists have the ability to choose targets and tactics and can often adjust conditions to achieve their objective. Terrorist attacks are often in a more specific location rather than a widespread, more predictable area such as a flood plain. As demonstrated in the Waterman Terrorism Incident, "homegrown terrorists" (self-radicalizing and pulls off their attacks without any help or communication with people in other countries) are even harder to detect and predict.

Translating most manmade hazard profiles into meaningful geospatial information is difficult at best. Instead, the planning team will use an asset-specific approach, identifying potentially at-risk critical facilities and systems in the community. Once a comprehensive list of assets has been developed, it will be prioritized so that the community's efforts can be directed to protect the most important assets first. Then, beginning with the highest priority assets, the vulnerabilities of each facility or system to each type of hazard will be assessed (FEMA 2003).

4.8.4 Magnitude/ Severity

As previously discussed, predicting terrorist attacks cannot be done with the same level of accuracy as predicting a natural hazard and its potential impacts on the community. However, we can learn from past terrorist incidents. Table 4-10 profiles 10 different types of terrorist attacks and technological hazards.

Hazard	Application Mode	Hazard Duration	Extent of Effects; Static/Dynamic	Mitigating and Exacerbating Conditions
Conventional Bomb/ Improvised Explosive Device	Detonation of explosive device on or near target; delivery via person, vehicle, or projectile.	Instantaneous; additional "secondary devices" may be used, lengthening the time duration of the hazard until the attack site is determined to be clear	Extent of damage is determined by type and quantity of explosive. Effects generally static other than cascading consequences, incremental structural failure, etc.	Overpressure at a given standoff is inversely proportional to the cube of the distance from the blast; thus, each additional increment of standoff provides progressively more protection. Terrain, forestation, structures, etc. can provide shielding by absorbing and/or deflecting energy and debris. Exacerbating conditions include ease of access to target; lack of barriers/shielding; poor construction; and ease of concealment of device
Chemical Agent *	Liquid/aerosol contaminants can be dispersed using sprayers or other aerosol generators; liquids vaporizing from puddles/ containers; or munitions.	Chemical agents may pose viable threats for hours to weeks depending on the agent and the conditions in which it exists.	Contamination can be carried out of the initial target area by persons, vehicles, water and wind. Chemicals may be corrosive or otherwise damaging over time if not remediated.	Air temperature can affect evaporation of aerosols. Ground temperature affects evaporation of liquids. Humidity can enlarge aerosol particles, reducing inhalation hazard. Precipitation can dilute and disperse agents but can spread contamination. Wind can disperse vapors but also cause target area to be dynamic. The micro-meteorological effects of buildings and terrain can alter travel and duration of agents. Shielding in the form of sheltering in place can protect people

Hazard	Application Mode	Hazard Duration	Extent of Effects; Static/Dynamic	Mitigating and Exacerbating Conditions
				and property from harmful effects.
Arson/ Incendiary Attack	Initiation of fire or explosion on or near target via direct contact or remotely via projectile.	Generally minutes to hours.	Extent of damage is determined by type and quantity of device/ accelerant and materials present at or near target. Effects generally static other than cascading consequences, incremental structural failure, etc.	Mitigation factors include built-in fire detection and protection systems and fire-resistive construction techniques. Inadequate security can allow easy access to target, easy concealment of an incendiary device and undetected initiation of a fire. Non-compliance with fire and building codes as well as failure to maintain existing fire protection systems can substantially increase the effectiveness of a fire weapon.
Armed Attack	Tactical assault or sniping from remote location.	Generally minutes to days.	Varies based upon the perpetrators' intent and capabilities	Inadequate security can allow easy access to target, easy concealment of weapons and undetected initiation of an attack.
Biological Agent *	Liquid or solid contaminants can be dispersed using sprayers/aerosol generators or by point or line sources such as munitions, covert deposits and moving sprayers.	Biological agents may pose viable threats for hours to years depending on the agent and the conditions in which it exists	Depending on the agent used and the effectiveness with which it is deployed, contamination can be spread via wind and water. Infection can be spread via human or animal vectors.	Altitude of release above ground can affect dispersion; sunlight is destructive to many bacteria and viruses; light to moderate wind will disperse agents but higher winds can break up aerosol clouds; the micro- meteorological effects of building and terrain can influence aerosolization and travel of agents.
Cyberterrorism	Electronic attack using one computer system against another.	Minutes to days	Generally no direct effects on built environment.	Inadequate security can facilitate access to critical computer systems, allowing them to be used to conduct attacks.

Hazard	Application Mode	Hazard Duration	Extent of Effects; Static/Dynamic	Mitigating and Exacerbating Conditions
Agriterrorism	Direct, generally covert contamination of food supplies or introduction of pests and/or disease agents to crops and livestock.	Days to months	Varies by type of incident. Food contamination events may be limited to discrete distribution sites, whereas pests and diseases may spread widely. Generally no effects on built environment.	Inadequate security can facilitate adulteration of food and introduction of pests and disease agents to crops and livestock.
Radiological Agent **	Radioactive contaminants can be dispersed using sprayers/aerosol generators, or by point or line sources such as munitions, covert deposits and moving sprayers.	Contaminants may remain hazardous for seconds to years depending on material used.	Initial effects will be localized to site of attack; depending on meteorological conditions, subsequent behavior of radioactive contaminants may be dynamic.	Duration of exposure, distance from source of radiation, and the amount of shielding between source and target determine exposure to radiation.
Nuclear Bomb **	Detonation of nuclear device underground, at the surface, in the air or at high altitude.	Light/heat flash and blast/shock wave last for seconds; nuclear radiation and fallout hazards can persist for years. Electromagnetic pulse from a high altitude detonation lasts for seconds and affects only unprotected electronic systems.	Initial light, heat and blast effects of a subsurface, ground or air burst are static and are determined by the device's characteristics and employment; fallout of radioactive contaminants may be dynamic, depending on	Harmful effects of radiation can be reduced by minimizing the time of exposure. Light, heat and blast energy decrease logarithmically as a function of distance from seat of blast. Terrain, forestation, structures, etc. can provide shielding by absorbing and/or deflecting radiation and radioactive contaminants.

Hazard	Application Mode	Hazard Duration	Extent of Effects; Static/Dynamic	Mitigating and Exacerbating Conditions
			meteorological conditions.	
Hazardous Material Release (fixed facility or transportation)	Solid, liquid and/or gaseous contaminants may be released from fixed or mobile containers.	Hours to days	Chemicals may be corrosive or otherwise damaging over time. Explosion and/or fire may be subsequent. Contamination may be carried out of the incident area by persons, vehicles, water and wind.	As with chemical weapons, weather conditions will directly affect how the hazard develops. The micro-meteorological effects of building and terrain can alter travel and duration of agents. Shielding in the form of sheltering in place can protect people and property from harmful effects. Non-compliance with fire and building codes as well as failure to maintain existing fire protection and containment features can substantially increase the damage from a hazardous materials release.

Table 4-10: Event Profiles for Terrorism and Technological Hazards

** Source: Jane's Chem-Bio Handbook*
*** Source: FEMA, Radiological Emergency Management Independent Study Course*

Source: FEMA State and Local Mitigation Planning- how-to guide: Integrating Manmade Hazards

4.8.5 Frequency/ Probability of Future Occurrences

We can usually forecast the type, frequency and location of a natural hazard thanks to the laws of physics and nature. However, when dealing with manmade hazards such as terrorism, we are often dealing with functions of the human mind- malevolence, incompetence, carelessness and other behaviors. These actions cannot be predicted with any accuracy, therefore, there is the potential for an act of terrorism to occur anywhere, at any time.

4.9 Wind Surge Hazard Profile

Severe wind surges pose a significant risk to life and property in the region by creating conditions that disrupt essential systems such as public utilities, telecommunications, and transportation routes. High winds can and do occasionally cause tornado-like damage to local homes and businesses. Severe wind surges can present a very destabilizing effect on the dry brush that

covers local hillsides and urban wildland interface areas. High winds can have destructive impacts, especially to trees, power lines, utility services, and can accelerate a fire. The entire City of Fontana is at risk for these high winds.

Santa Ana Winds

Based on local history, most incidents of high wind in the City of Fontana are the result of the Santa Ana wind conditions. While high impact wind incidents are not frequent in the area, significant Santa Ana wind events and sporadic microburst activity have been known to negatively impact the local community. When conditions are right, the winds come down through the mountain passes and can reach hurricane force and be sustained for days at a time.

Santa Ana winds are generally defined as warm, dry winds that blow from the east or northeast (offshore). These winds occur below the passes and canyons of the coastal ranges of Southern California and in the Los Angeles basin. Santa Ana winds often blow with exceptional speed in the Santa Ana Canyon. Forecasters at the National Weather Service offices in Oxnard and San Diego usually place speed minimums on these winds and reserve the use of "Santa Ana" for winds greater than 25 knots. These winds accelerate to speeds of 35 knots as they move through canyons and passes, with gusts to 50 or even 60 knots.

The complex topography of Southern California combined with various atmospheric conditions creates numerous scenarios that may cause widespread or isolated Santa Ana events.

Commonly, Santa Ana winds develop when a region of high pressure builds over the Great Basin (the high plateau east of the Sierra Mountains and west of the Rocky Mountains including most of Nevada and Utah). Clockwise circulation around the center of this high pressure area forces air down slope from the high plateau. The air warms as it descends toward the California coast at the rate of 5 degrees F per 1000 feet due to compressional heating. Thus, compressional heating provides the primary source of warming. The air is dry since it originated in the desert, and it dries out even more as it is heated.

These regional winds typically occur from October to March, but with climate change those months can vary each year. According to most accounts, the winds are named either for the Santa Ana River Valley where they originate or for the Santa Ana Canyon, southeast of Los Angeles, where they pick up speed.

Microburst / Macroburst Winds

Microbursts are strong, damaging winds which strike the ground and often give the impression a tornado has struck. They frequently occur during intense thunderstorms. The origin of a microburst is downward moving air from a thunderstorm's core. But unlike a tornado, they affect only a rather small area. Macrobursts are downbursts with winds up to 117 mph which spread across a path greater than 2.5 miles wide at the surface and which last from 5 to 30 minutes. The microburst on the other hand is confined to an even smaller area, less the 2.5 miles in diameter from the initial point of downdraft impact. An intense microburst can result in damaging winds near 270km/hr. (170 mph) and often last for less than five minutes.

Downbursts of all sizes descend from the upper regions of severe thunderstorms when the air accelerates downward through either exceptionally strong evaporative cooling or by very heavy

rain which drags dry air down with it. When the rapidly descending air strikes the ground, it spreads outward in all directions, like a fast-running faucet stream hitting the sink bottom.

When the microburst wind hits an object on the ground such as a house, garage or tree, it can flatten the buildings and strip limbs and branches from the tree. After striking the ground the powerful outward running gust can wreak further havoc along its path. Damage associated with a microburst is often mistaken for the work of a tornado, particularly directly under the microburst. However, damage patterns away from the impact area characteristic of straight-line winds rather than a twisted pattern of tornado damage.

4.9.1 Historical Occurrences

Each year there is a high probability that City of Fontana will be affected by high winds coming down the local canyons and the Cajon Pass. While the effects of the Santa Ana winds are often overlooked, it should be noted that in 2003, two deaths in Southern California were directly related to the fierce condition. A falling tree struck one woman in San Diego. The second death occurred when a passenger in a vehicle was hit by a flying pickup truck cover launched by the Santa Ana winds. In 2011, City of Pasadena had over 15 million dollars in damage from a single wind event lasting only a few hours. Furthermore, this section summarizes the significant historic wind surge events that occurred in and around Fontana. These are listed in Table 4-11 below.

Date	Weather	Adverse Impacts
5/23/1932	Strong winds and low humidity.	12 serious brush fires resulted, blackening nearly 2000 acres in San Diego County.
9/24-25/1939	Tropical storm lost hurricane status shortly before moving onshore at San Pedro. Sustained winds of 50 mph.	48 dead from sinking boats.
4/13/1956	Strong storm winds hit Chula Vista. Possible tornado.	Roof damage done to 60 homes & extensively to a school. Two injured by flying glass. Trees uprooted, TV antennas toppled and windows shattered.
11/19-29/1956	A strong and prolonged Santa Ana wind event started on 11.19 and ended on 11.29. On 11.20 a 100 mph gust was recorded at a forest lookout near Saugus.	A fire north of Descanso started on 11.19, killed 11 and burned 44,000 acres. Two wooden bridges and a power plant were destroyed.
11/21-22/1957	Extremely destructive Santa Ana winds.	Winds produced a 28,000 acre brush fire on a 40-mile front west of Crystal Lake. People were ordered off streets in some areas due to flying debris. 12 of 33 passengers on an airplane over Ontario were hurt by a downdraft in extreme turbulence. Paint was completely stripped off of windward sides of 4 cars stalled in a Fontana sandstorm.

11/5-6/ 1961	Strong Santa Ana winds fanned fires in Bel Air and Brentwood.	Fire in Topanga Canyon. 103 injured firemen, $100 million economic losses including 484 buildings (mostly residential) and 6,090 acres destroyed.

9/26 – 29/ 1970	Gusts to 60 mph at Cuyamaca Rancho State Park.	The Laguna Fire. 8 killed, 400 homes destroyed, 185,000 acres burned.
12/20/1977	Very strong Santa Ana winds gusted to 90 mph in the mountains of San Diego County.	A truck driver was killed on I-8. A girl in La Mesa was injured when a tree fell on her. Some brush fires were fanned. Widespread crop damage was suffered in northern San Diego County to avocados, strawberries, etc. Numerous trees and power poles were knocked down.
11/24/1980	Annual Santa Ana winds rushing over the mountains over 70 mph.	Panorama fire destroyed 280 homes, 49 homes damaged, 64 other structures destroyed. 4 civilian deaths, 77 injuries.
1/20/1987	Wind gusts to 80 mph below Cajon Pass, 70 mph in San Bernardino, 60 mph at Mt. Laguna and 40 mph in El Toro.	Thick dust clouds. Trucks blown over. Trees down. A hundred power poles were down in the Inland Empire. Numerous power outages. Schools closed in Fontana as a result of power outages. A mobile classroom was knocked over. Brush fires were started.
12/12 – 13/ 1987	Strong Santa Ana winds in San Bernardino, with gusts to 60 mph. Gusts up to 80 mph around San Bernardino. Strong damaging winds in San Diego County.	80 power poles were blown down within a ½ mile stretch in Fontana and Rancho Cucamonga. One was injured when a tree fell on a truck. Downed tree limbs damaged cars, homes and gardens. Power poles and freeway signs were damaged. A parked helicopter was blown down a hillside in Altadena.
2/16 – 19/ 1988	Very strong Santa Ana winds: Gusts of 90 mph at Newport Beach, 70+ mph in the San Gabriel Mountain foothills. Gusts to 76 mph at Monument Peak - Mt. Laguna. Gusts to 63 mph at Ontario & gusts to 50 mph at Rancho Cucamonga.	Numerous trees and power lines downed and power outages all near the foothills of the San Gabriel and San Bernardino Mountains. Fontana schools were closed due to wind damage at schools. Three were killed when a big rig truck overturned and burned, one was killed having stepped on a downed power line). Power outages hit 200,000 customers in LA and Orange counties. Grass fires resulted. Planes flipped in local airports. Boats were torn from moorings in Newport Harbor.

10/26 – 27/ 1993	Santa Ana winds: gust to 62 mph at Ontario.	Twenty fires ravaged Southern California including in Laguna Hills. 4 dead, 162 injured, $1 billion economic losses in property alone and 194,000 acres were destroyed.
10/25 – 27/ 2003	Santa Ana Winds again hit Southern California	Unprecedented wildfires consumed hundreds of thousands of acres, killed over 20 people, & caused over one billion dollars in damage.
1/22 – 24/ 2006	Santa Ana wind event. Fremont Canyon at 71 mph. During these days, wind gusts exceeded 60 mph on 19 hourly observations.	7 big rigs overturned in Fontana. Downed power lines and trees caused power outages and property damage. Roof of a car port torn off in Hemet. Dust storm closed Ramona Expressway.
10/26/2006	Offshore winds blew to 50 mph in the Banning Pass.	The Esperanza Fire was started by an arsonist. It burned 40,200 acres from Cabazon to San Jacinto. It destroyed 34 homes and killed 5 firefighters.
10/21 – 23/ 2007	Very strong Santa Ana winds. A gust of 85 mph was recorded at Fremont Canyon, 79 mph at San Bernardino, 75 mph at Descanso and Mira Loma, 74 mph at Fallbrook and Rancho Cucamonga. Some locations experienced tropical storm force winds (or greater) for more than 36 consecutive hours.	Winds caused at least $60 million in damage and destruction to buildings, fences, vehicles, etc. The devastating wildfires of 2007 were fanned by these winds. These fires caused the largest mass evacuation in California history.
11/15 -19/ 2008	Santa Ana winds gusted over 70 mph in the Santa Ana mountains and over 60 mph in the northern Inland Empire.	Freeway Complex Fire from Corona through Chino Hills and Yorba Linda burned more than 30,000 acres.

3/20/2011	A strong low pressure system dug through southern California, bringing very strong winds, heavy rain and heavy snow, with blizzard conditions in the mountains. The strongest winds occurred over the high desert where winds exceeded 110 mph at times, causing considerable damage in the Apple Valley area.	A spotter measured a gust of 115 MPH on an anemometer. The gust damaged the anemometer shortly after. Several power poles and trees were knocked down, causing a blackout that lasted nearly 24 hours. Numerous houses sustained roof damage and at least one house had its roof destroyed. Another spotter reported a measured wind gust of 59 MPH with sustained winds of 30 MPH, resulting in downed power lines, tiles blown off roof and power outages. Yet another spotter measured sustained winds of 40 MPH with a gust of 65 MPH between 1300 and 1400 PST.

12/1-3/ 2011	These events were the result of a large upper-level closed low over northern Baja, Mexico and featured four Santa Ana events, the strongest of which occurred in Orange County and southwest San Bernardino County with wind gusts 45 to 65+ mph and reported damage on December 1. Much drier air moved into San Diego County on Saturday December 3, when the Santa Ana mountains and foothills had another surge of Santa Ana/offshore winds with gusts to near 60 mph and very low relative humidity. The final period of winds developed behind another system passing to our east on Monday, bringing wind gusts to 50 to 65 mph Monday night and Tuesday morning in the San Diego County mountains, and very low humidity. The Palm Avenue Elementary weather station in the city of San Bernardino recorded sustained northeast winds of 49 mph around 0700 PST on the 1st. A max gust of 70 mph was also recorded at that station at 0551 PST. The Cal State San Bernardino mesonet station reported high winds between 0350 and 0550 PST. During this time, sustained winds of 40 mph were recorded along with gusts of 47 and 53 mph.	Numerous occurrences of wind damage near these stations were reported. An overturned box truck was blocking the slow lane of I-15 near Glen Helen Parkway. Power lines and trees were downed near the city of San Bernardino. Power poles and lines were also down across 3rd Avenue near the Crafton Reservoir in Mentone. These winds were strong enough to overturn several trucks, down power lines, reduce visibilities in dust and topple hundreds of large trees in Rancho Cucamonga (near Fontana, San Bernardino and Ontario), near the Cajon Pass along I-15. Rancho Cucamonga was declared a state of emergency by the State of California for the nearly 500 trees damaged. This area also suffered damage to the electrical infrastructure leaving many without power.
3/6/2012	A very strong cold front brought high winds to much of the Mojave Desert and southern Great Basin. Isolated heavy snow also fell in the mountains.	Several utility poles were knocked over, and a few transformers caught fire.

4/15-16/ 2013	A strong low pressure system and cold front brought high winds and dust storm conditions to portions of the Mojave Desert.	The peak gust occurred at Bicycle Lake (KBYS) at 0315 PST. A tree and 12 foot tall ham radio tower were blown down in Barstow, and several trees were knocked down and housing areas were damaged on Fort Irwin. Multiple roads were closed, including Interstate 40, as dust storm conditions led to several accidents.
5/10/2014	A strong cold front brought high winds to much of the Mojave Desert and southern Great Basin.	Widespread damage occurred on Fort Irwin. At least 147 fences were blown down, along with many trees and power lines, and some roofs were damaged. Several power lines were blown down in and around Barstow, and three telephone poles were blown down in Trona. Dust storm conditions contributed to a pileup on I-40 near Newberry Springs involving six big rigs, which caused three injuries (indirect) and closed the interstate for several hours.
1/24/2015	A strong surface high pressure area over the Great Basin resulted in gusty east to northeast winds near the mountain crests, in the coastal foothills, and western inland valleys, including the Inland Empire. Gusty winds began on the 21st, reaching peak strength on the 23rd through 24th. Several stations recorded gusts above 65 mph. Damage included several trees and power lines down in the Inland Empire and foothills of San Diego County. There were also reports of two semi-trucks overturned, one in Rancho Cucamonga, and the other just west of Pine Valley.	High winds occurred at the Highland Springs RAWS between 0516-0716 PST on the 24th. During this time, winds were sustained out of the ENE at 40-50 mph with gusts in the 60s. A peak gust of 69 mph was recorded between 0616-0716 PST. The Ontario Airport ASOS recorded a peak gust of 64 mph around 0405 PST on the 24th. ABC7 news reported several trees down due to wind in Rancho Cucamonga and Alta Loma, as well as power lines down and customers without electricity in Fontana. One large tree fell on a car, completely crushing it, in Rancho Cucamonga. CHP also reported a big rig flipped over into a ditch along Highway 210 near the Interstate 15 junction, likely wind-related.

12/2-3/ 2016	A surface high setup over the Pacific Northwest and northern Nevada, resulting in favorable conditions for strong northerly Santa Ana winds through the Cajon Pass and over portions of Orange County. Winds began on December 2nd and lingered into the 3rd, with local gusts of 60-90 mph. Numerous trees were downed causing power outages, and flights were grounded for a period at Ontario International Airport.	Northerly winds gusting to 70 mph downed numerous trees below the Cajon Pass. The fallen trees blocked roadways and caused at least 11,000 power outages. Planes were grounded at Ontario International Airport, where a peak wind gust of 68 mph broke terminal windows and fanned a small brush fire.

Table 4-11: Wind Surge Historical Occurrences

4.10 Vulnerability Assessment

Vulnerability can be quantified in those instances where there is a known, identified hazard area, such as a mapped floodplain. In these instances, the numbers and types of buildings subject to the identified hazard can be inventoried and their values tabulated. Other information can be collected in regard to the hazard area, such as the location of critical community facilities, historic structures, and valued natural resources. Together, this information conveys the vulnerability of that area to a hazard.

The information in this section provides an explicit representation of what a community stands to lose in a disaster. This is useful for City Staff and other decision makers who will need to balance the costs of mitigation against the potential harm to residents and damage to property. It provides comparable measurements of community natural hazard exposure and assists in determining which hazards and/or what parts of the City to focus on making resilient to disaster first. Based upon possible assets at risk, hazard mitigation resources can be directed where need be, in-part, by a vulnerability assessment and information presented in this section.

The vulnerability assessment is developed by providing the hazard mitigation analysts with quantitative and qualitative information for each hazard identified in the LHMP. Through an exposure analysis, quantitative data is developed for each hazard. An exposure analysis provides quantities of people and assets at risk to particular hazards. Qualitative data has been developed and presented in this section for hazards without measurable data. Qualitative data provides information beyond quantities of people and assets at risk, but rather a description of how the hazard could affect the region around Fontana.

Note: The hazard exposure analysis has been developed with best available data and follows methodology described in the FEMA publication "Understanding Your Risks—Identifying Hazards and Estimating Losses".

Note: There are other intangible losses that could result from a natural hazard event, such as losses of historic or cultural integrity or damage to the environment that are difficult to quantify. Other costs, including response and recovery costs, are often unrecoverable and are not addressed in this document.

4.10.1 Methodology

A vulnerability assessment was conducted for each of the identified priority hazards. Geospatial data is essential in determining population and assets exposed to particular hazards. Geospatial analysis can be conducted if a natural hazard has a particular spatial footprint that can be overlaid against the locations of people and assets. In City of Fontana, wildfire, flood, dam failure, earthquake, landslides, and wind surges have known geographic extents and corresponding spatial information about each hazard.

Several sources of data are necessary to conduct a vulnerability analysis. Figure 4-25 provides an exhibit of the data inputs and outputs used to create the vulnerability analysis results presented in this section. U.S. Census data is the primary source in determining natural hazard exposure to residents. Census data has been used to determine the population at risk, which is generally

referred to as population exposure. Population exposure is provided for wildfire, flooding, dam failure, severe weather, earthquakes and landslides as potential hazards later in this section.

Together with the U.S. Census data, asset data was used to provide a snapshot of how City assets are affected by natural hazards. For purposes of this vulnerability analysis, asset data includes parcels and critical infrastructure within the City of Fontana boundaries. Critical infrastructure is described as assets that are essential for people and a community to function. Critical infrastructure includes such as utilities, City of Fontana/San Bernardino County owned facilities, bridges, schools, and other community facilities that provide essential services to residents.

Critical facilities data was developed from a variety of sources including City of Fontana/San Bernardino County owned and maintained data, state and federal government datasets, and private industry datasets. A critical infrastructure spatial database was developed to translate critical facilities information into georeferenced[5] points. Critical facility points are intersected with the spatial hazard layers to develop a list of "at risk" critical facilities. The City of Fontana/San Bernardino County critical facilities that intersect with natural hazards are referred to as facilities with hazard "exposure". Exposure results are presented later in this section.

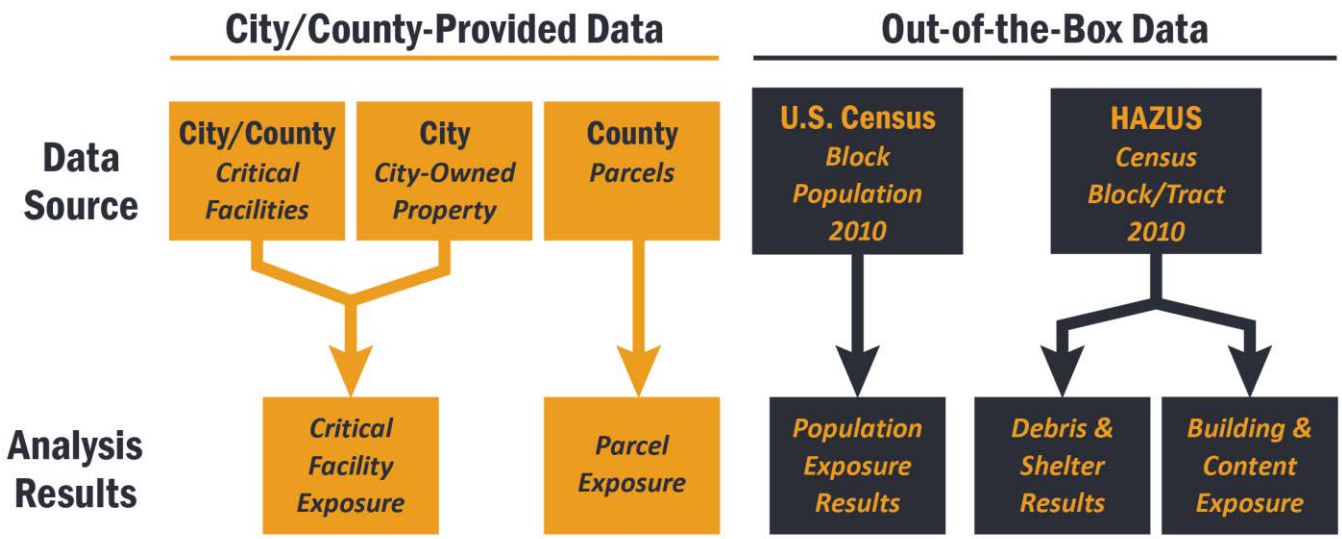


Figure 4-25: Data Source and Methodology

Lastly, FEMA's Hazus-MH MR5 (Hazus) software was implemented to conduct detailed loss estimation for flood and earthquake. Hazus is a nationally applicable standardized methodology that contains models for estimating potential losses from earthquakes, floods, and hurricanes. HAZUS uses Geographic Information Systems (GIS) technology to estimate physical, economic, and social impacts of disasters. For purposes of this planning effort, Hazus was used to

[5] To georeference something means to define its existence in physical space. That is, establishing its location in terms of map projections or coordinate systems. The term is used both when establishing the relation between raster or vector images and coordinates, and when determining the spatial location of other geographical features.

graphically illustrate the limits of identified high-risk locations due to possible earthquakes and floods.

The vulnerability and potential impacts from priority hazards that do not have specific mapped areas nor the data to support additional vulnerability analyses are discussed in more general terms

4.10.2 Population and Assets

To describe vulnerability for each hazard, it is important to understand the "total" population and "total" assets at risk. The exposure for each hazard described in this section will refer to the percent of total population or percent of total assets. This provides the possible significance or vulnerability to people and assets for the natural hazard event and the estimated damage and losses expected during a "worst case scenario" event for each hazard. Sections below provide a description of the total population, critical facilities, and parcel exposure inputs.

4.10.2.1 Population

To develop hazard-specific vulnerability assessments, population near natural hazard risks should be determined to understand the total "at risk" population. We can understand how geographically defined hazards may affect the City of Fontana by analyzing the extent of the hazard in relation to the location of population. For purposes of the vulnerability assessment approximately 196,433 (95.8%) of the City of Fontana's population is exposed to one or more hazards within or near the City of Fontana boundaries. Each natural hazard scenario affects the City of Fontana residents differently depending on the location of the hazard and the population density of where the hazard could occur. Vulnerability assessment sections presented later in this section summarize the population exposure for each natural hazard.

The population statistics for the City of Fontana are based on the U.S. Bureau of the Census 2010 and the ESRI forecasts for 2016 for zip codes 92335, 92336, 92337. Most of the Fontana residents have a Hispanic origin with 70.1% of the population.

- Total Population: 204,961
- Average Household: 4.04
- Population Growth (2000-2010): 18.78%
- Number of Households: 50,557
- Median Household Income: $64,520

The impacts of natural and human-made hazards in terms of ability to recover vary greatly among the population. As the events associated with the hurricane Katrina in the Gulf Coast have shown, vulnerable populations, including seniors, disabled citizens, women, and children, as well as those people living below the poverty level, are often disproportionately impacted by natural and human-made hazards. With the current Inland Empire high unemployment rate along with the general lack of training and workforce development programs, this creates a population that generally has fewer resources to prepare their homes for a disaster or to take care of themselves without assistance after an event.

4.10.2.2 Vulnerable Populations

The severity of a disaster depends on both the physical nature of the extreme event and the socioeconomic nature of the populations affected by the event. Important socioeconomic factors tend to influence disaster severity. A core concept in a vulnerability analysis is that different people, even within the same region, have a different vulnerability to natural hazards.

4.10.2.2.1 Income and Housing Condition

Income or wealth is one of the most important factors in natural hazard vulnerability. This economic factor affects vulnerability of low income populations in several ways. Lower income populations are less able to afford housing and other infrastructure that can withstand extreme events. Low income populations are less able to purchase resources needed for disaster response and are less likely to have insurance policies that can contribute to recovery efforts. Lower income elderly populations are less likely to have access to medical care due to financial hardship. Because of these and other factors, when disaster strikes, low income residences are far more likely to be injured or left without food and shelter during and after natural disasters.

Figure 4-26 shows the median household income distribution for the City of Fontana in 2012. The "median" is the value that divides the distribution of household income into two equal parts (e.g., the middle). The average median household income in the City of Fontana between 2010 and 2014 was $64,520, in the United States during the same period the median house household income was $56,516. The map in Figure 4-26 shows 2012 household income estimates using Census 2010 geographies.

4.10.2.2.2 Age

Children and the elderly tend to be more vulnerable during an extreme natural disaster. They have less physical strength to survive disasters and are often more susceptible to certain diseases. The elderly often also have declining vision and hearing and often miss reports of upcoming natural hazard events. Children, especially young children, have the inability to provide for themselves. In many cases, both children and the elderly depend on others to care for them during day to day life.

Finally, both children and the elderly have fewer financial resources and are frequently dependent on others for survival. In order for these populations to remain resilient before and after a natural hazard event, it may be necessary to augment city residents with resources provided by the City, state and federal emergency management agencies and organizations. Figure 4-26 shows the median household income distribution maps, and Figure 4-27 and Figure 4-28 show the location of vulnerable population by age within the City of Fontana.

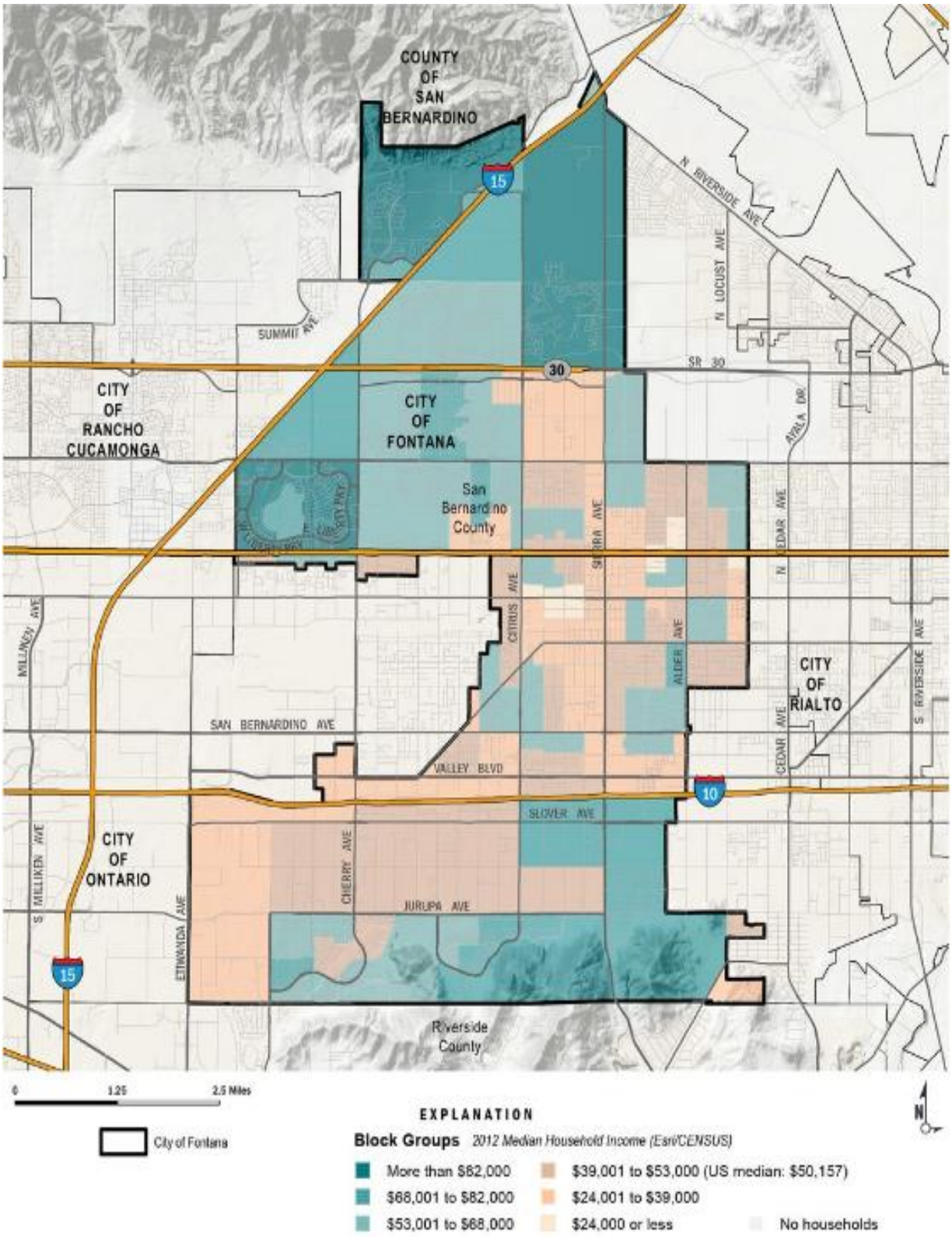


Figure 4-26: Median Household Income Distribution Map

Source: Esri/US Census Bureau

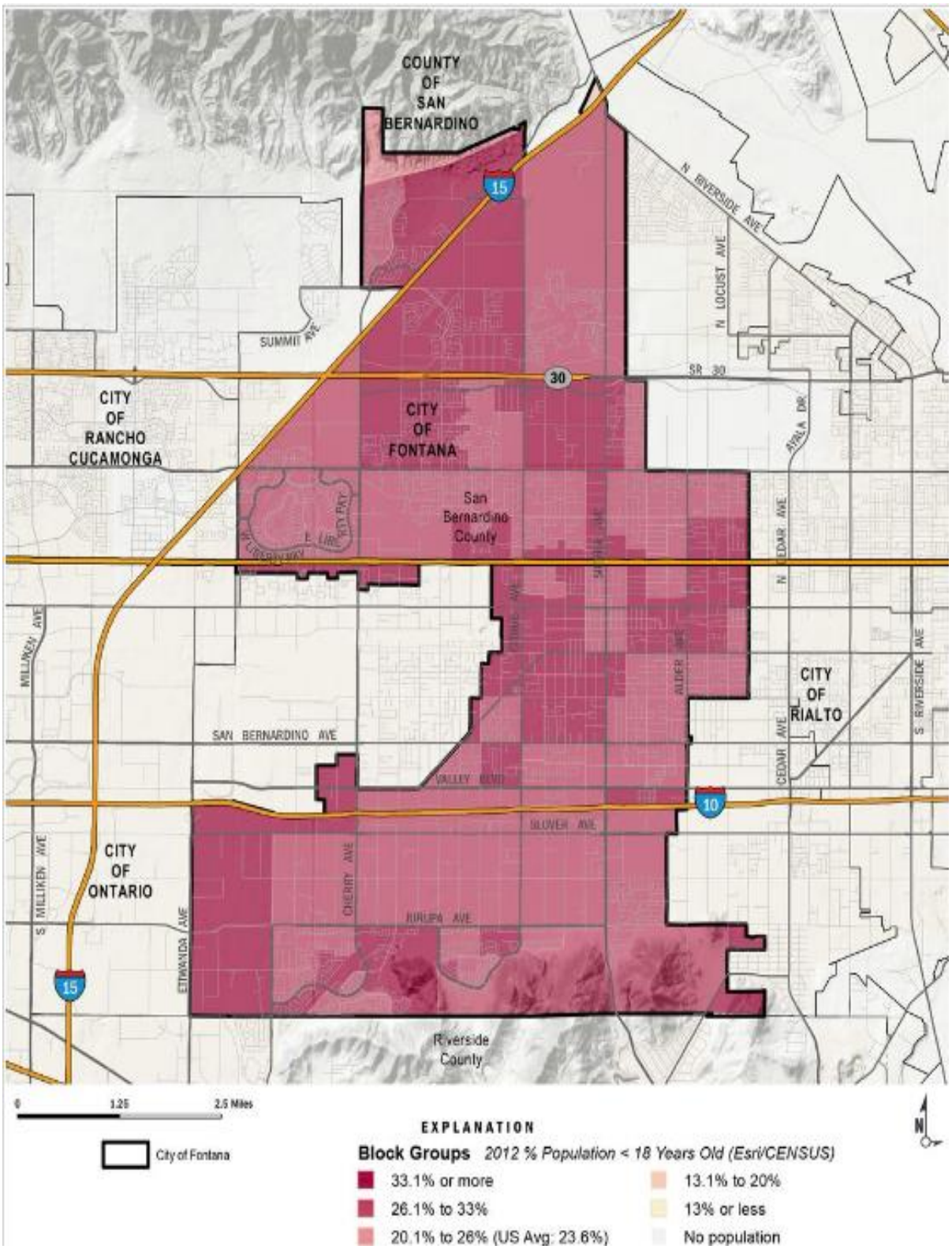


Figure 4-27: Population under 18

Source: Esri/ US Census Bureau

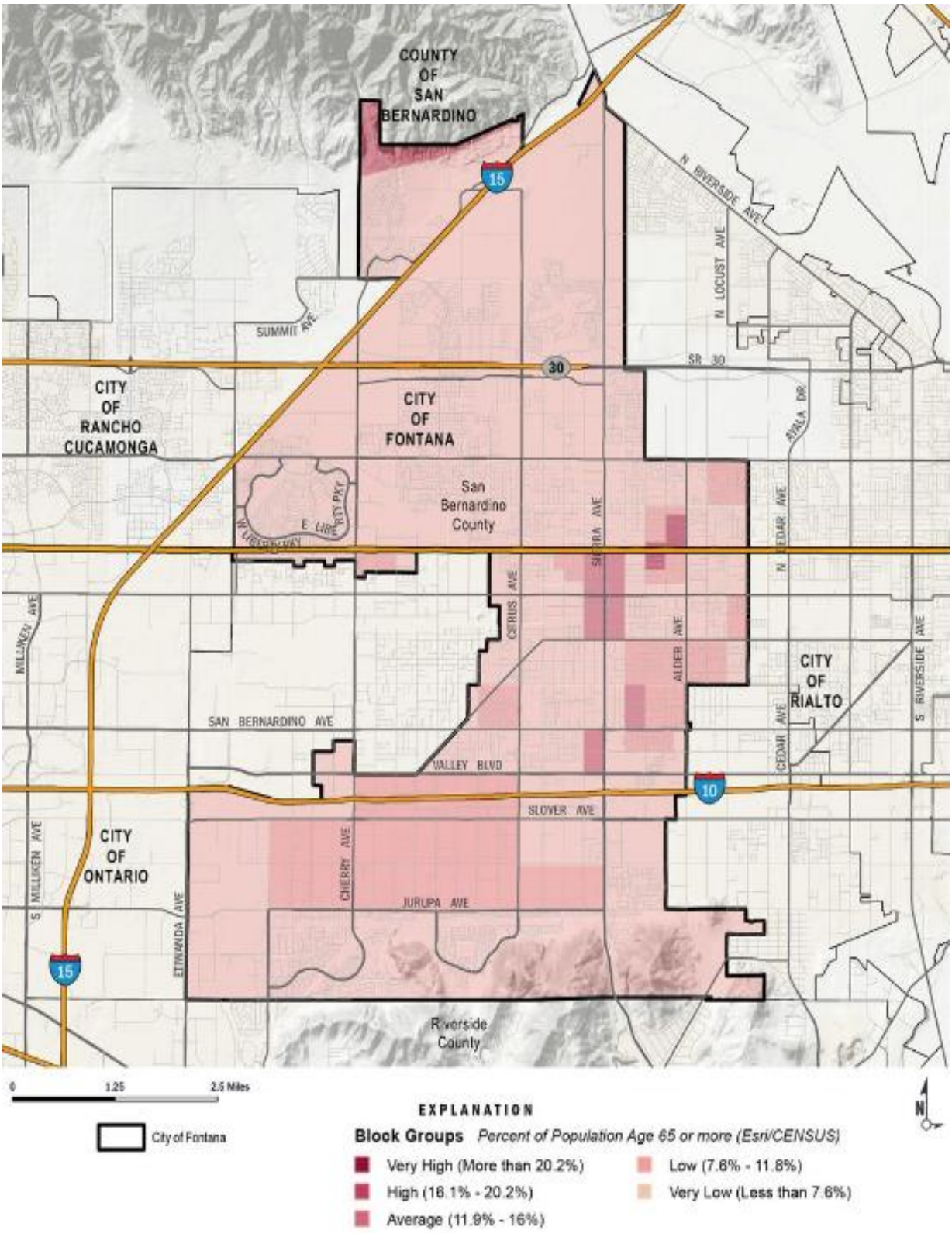


Figure 4-28: Population Over 65

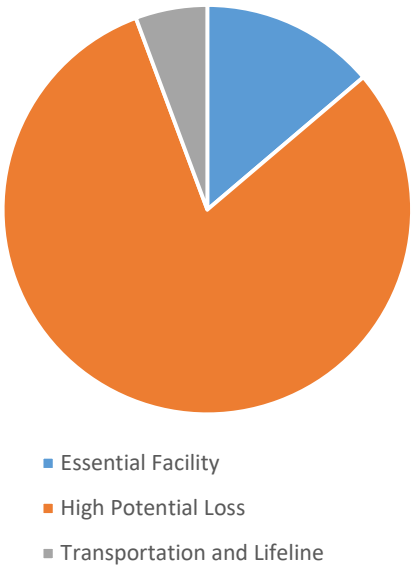
Source: Esri/Us Census Bureau

4.10.2.3 Critical Facilities

Critical facilities are of particular concern when conducting hazard mitigation planning. Critical facilities are defined as essential services, and if damaged, would result in severe consequences to the health, safety, and welfare of the public.

An inventory of critical facilities based on data from the County and other publicly sourced information were used to develop a comprehensive inventory of facility points and lifelines. Critical facility points include fire stations, buildings containing hazardous materials (HAZMAT), schools, transportation, utilities, and government buildings. Lifelines include transportation routes only. A current representation of the critical facilities and lifelines are provided in Table 4-12 and Table 4-13. Some critical facility information has been omitted from documentation due to national security purposes. The City of Fontana manages and maintains a complete list of critical facilities.

Infrastructure Type	Total Feature Count
Essential Facility	85
EOC	1
Fire Station	6
Government Facility	-
Hospital	12
Police Station	2
School	64
High Potential Loss	496
Dam	1
Economic Element-Major Employer	-
Hazmat	377
Historic/Cultural Resource-Historic	-
Utility-Communication Facility	13
Utility-Electric Power Facility	-
Utility-Natural Gas Facility	-
Utility-Potable Water Facility	-
Utility-Waste Water Facility	-
Vulnerable Population-Adult Residential Care	35



Vulnerable Population-Child Care	44
Vulnerable Population-Flood Zone	-
Vulnerable Population-Foster/Home Care	4
Vulnerable Population-Mobile Home Park	-
Vulnerable Population-RV Park	-
Vulnerable Population-Senior Care	22
Transportation and Lifeline	35
Highway Bridge	34
Railway Bridge	1
Bus Facility	-
Rail Facility	-
Airport Facility	-
Grand Total	**616**

Table 4-12: Critical Facility Points

Infrastructure Type	Total Linear Mileage
Transportation and Lifeline	**610**
Railway	**20**
Roads	**590**
Interstate Highway	28
State / County Highway	106
Primary Highway	9
Local Road, Major	194
Local Road	220
Other Minor Road	13
Vehicular Trail	1
Cul-de-Sac / Traffic Circle	0
Ramp	19
Service Road	-
Grand Total	**610**

Table 4-13: Linear Utilities

4.10.3 Hazus-MH Inputs

FEMA's loss estimation software, Hazus MH, was used to analyze the City of Fontana's building risk to flood and earthquake hazards. Hazus contains a database of economic, demographic, building stock, transportation facilities, local geology, and other information that can be used for several steps in the risk assessment process. Hazus software operates on structure square footage, structure replacement, and content replacement costs aggregated to the census block and tract levels depending on type of hazard analysis. Figure 4-29 and Figure 4-30 provide value data for building categories at the census block and census tract levels. Census block and census tracts are used to provide input information for the Hazus analysis presented in this report.

The project team used the SBEFRA project incorporated these newly updated DFIRM data into HAZUS to assess potential losses in the mapped 100-year (with and without levee protection) and 500-year flood zones. The City of Fontana results are provided in Table 4-14.

Note: The Hazus software utilizes different census level information inputs to develop loss estimates depending on the hazard module. The flood module uses census block information while the earthquake module uses census tract information. It is important to understand the total values of each as estimated damage to the community is presented on a percent of total value basis.

Building Type	Building Replacement Costs ($000)	Building Replacement Cost (%)	Content Replacement Cost ($000)	Content Replacement Cost (%)	Total Value ($000)	Total Value (%)
Agricultural	$3,320	50.0%	$3,320	50.0%	$6,640	0%
Commercial	$617,209	49.0%	$643,262	51.0%	$1,260,471	10%
Education	$56,180	49.6%	$57,026	50.4%	$113,206	1%
Governmental	$ 62,289	49.1%	$64,547	50.9%	$126,836	1%
Industrial	$85,246	43.1%	$112,429	56.9%	$197,675	2%
Religion	$55,526	50.0%	$55,526	50.0%	$111,052	1%
Residential	$7,416,905	66.7%	$3,708,681	33.3%	$11,125,586	86%
Total	**$8,296,675**	**64%**	**$ 4,644,791**	**36%**	**$12,941,466**	

Table 4-14: Hazus Flood Census Block Input Values

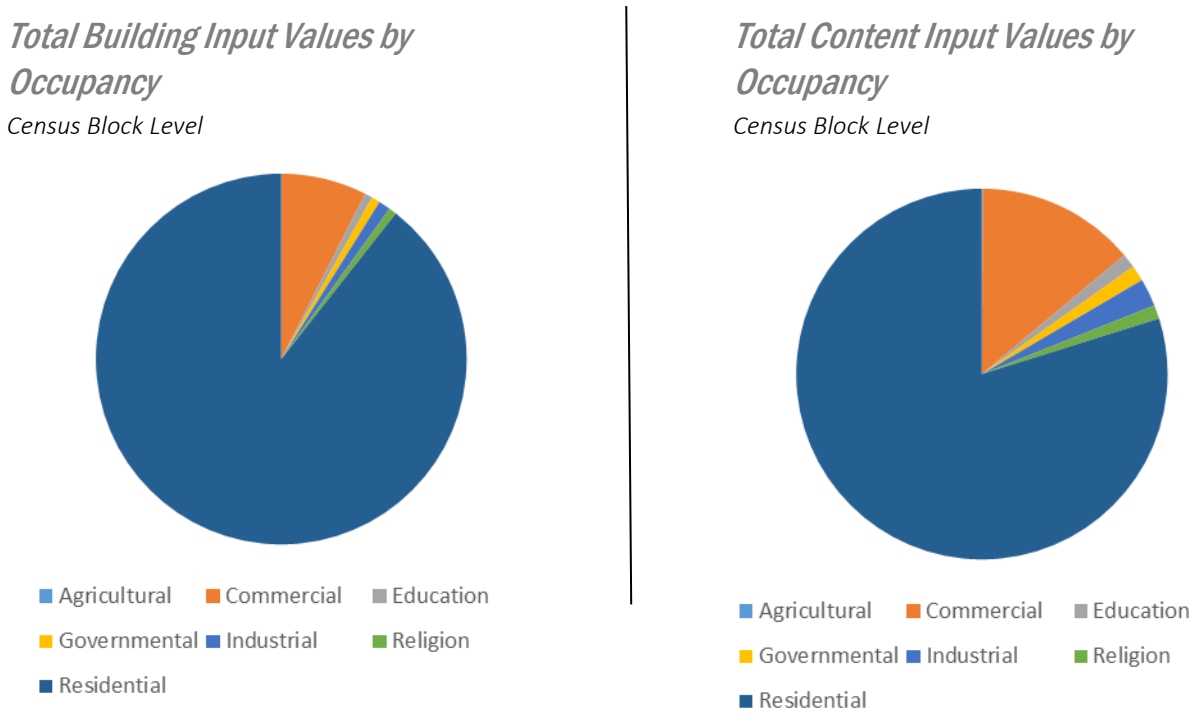


Figure 4-29: Census Block Building and Content Exposure Values

Building Type	Building Replacement Costs ($000)	Building Replacement Cost (%)	Content Replacement Cost ($000)	Content Replacement Cost (%)	Total Value ($000)	Total Value (%)
Agricultural	$31,550	50.0%	$31,550	50.0%	$63,100	0%
Commercial	$3,072,241	49.4%	$3,144,225	50.6%	$6,216,466	16%
Education	$161,736	49.9%	$162,582	50.1%	$324,318	1%
Governmental	$ 72,808	48.7%	$76,777	51.3%	$149,585	0%
Industrial	$1,342,700	40.9%	$1,940,958	59.1%	$3,283,658	9%
Religion	$165,314	50.0%	$165,314	50.0%	$330,628	1%
Residential	$18,649,703	66.7%	$9,325,544	33.3%	$27,975,247	73%
Total	**$23,496,052**	**61%**	**$14,846,950**	**39%**	**$38,343,002**	

Table 4-15: Hazus Earthquake Census Tract Input Values

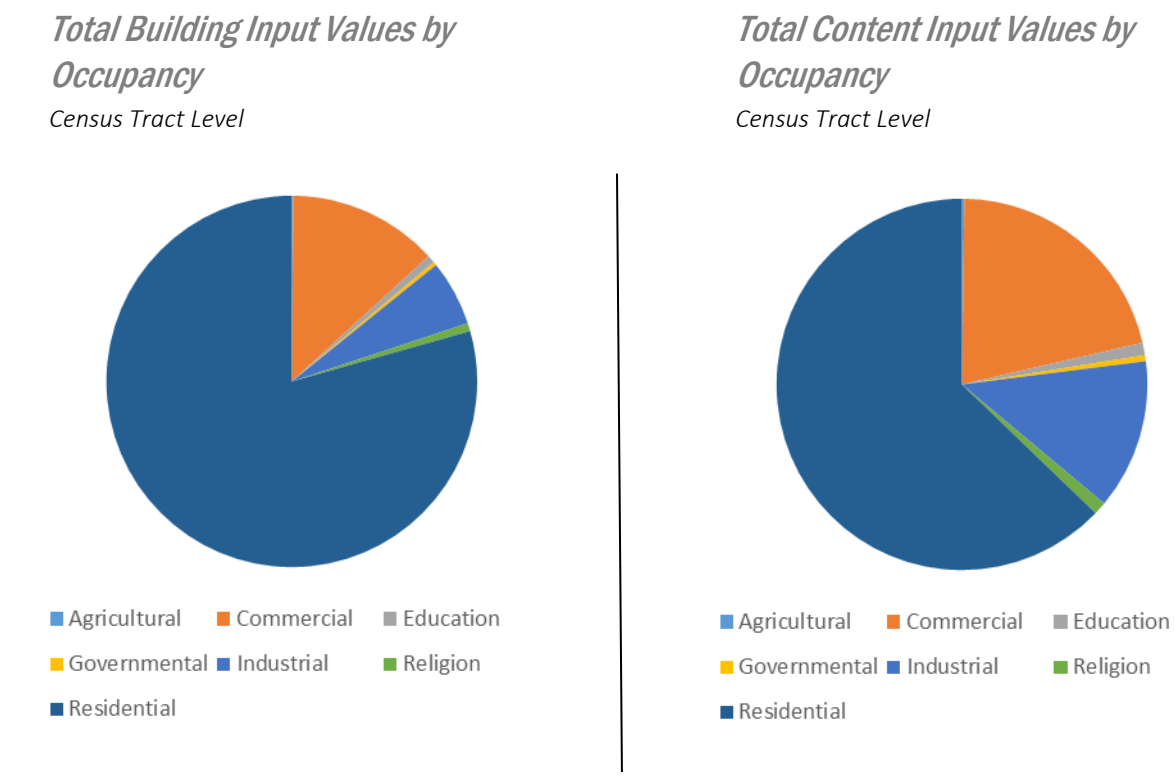


Figure 4-30: Census Tract Building and Content Exposure Values

4.10.4 Hazard Specific Vulnerability

The Disaster Mitigation Act regulations require that the City of Fontana evaluate the risks associated with each of the hazards identified in the planning process. This section summarizes the possible impacts and quantifies, where data permits, the City's vulnerability to each of the priority hazards identified in the hazard profiles. The hazards evaluated as part of this vulnerability assessment include:

An estimate of the vulnerability of the City to each identified hazard, in addition to the estimate of risk of future occurrence, is provided in each of the hazard-specific sections that follow. Vulnerability is measured in general, qualitative terms and is a summary of the potential impact based on past occurrences, geographic extent, and damage and casualty potential.

Vulnerability can be quantified in those instances where there is a known, identified hazard area, such as a mapped floodplain. In these instances, the numbers and types of buildings subject to the identified hazard can be inventoried and their values tabulated. Other information can be collected in regard to the hazard area, such as the location of critical community facilities, historic structures, and valued natural resources. Together, this information conveys the vulnerability of that area to a hazard.

Section 4 Vulnerability Assessment:

4.10.5 Flooding



Flooding is a significant problem in City of Fontana as described in the flood hazard profile. Historically, the operational area has been subject to flooding during periods of heavy rainfall, falling primarily between the months of October through April, which causes streams and drainage canals to become overwhelmed and overflow their banks and/or inundate storm drainage systems. Occasionally, overbank flows in City of Fontana have resulted in flooding of residential properties, road blockages, and traffic disruptions. In urbanizing areas, the increase in paved areas associated with new development decrease the amount of open land available to absorb rainfall and runoff, thus increasing the volume of water that must be carried away from by waterways. Flooding has damaged or destroyed commercial and residential structures; flooded bridges and streets and caused stream channels and flood control works to erode.

4.10.5.1 Population living with Flood Risk

Of greatest concern in the event of a flood is the potential for loss of life. Using 2012 population data aggregated by census blocks, an estimate was made of the population exposed to the 100- and 500-year floodplain. To account for census blocks that were partially within the floodplain, a weighted average was employed to calculate the proportion of the population within the floodplain. The results of the population overlay are shown in Figure 4-31. More than 4,900 residents live near or within the 100-year floodplain and approximately 14,000 residents live within the 500-year floodplain. Approximately 8,000 city residents live within areas protected by levees.

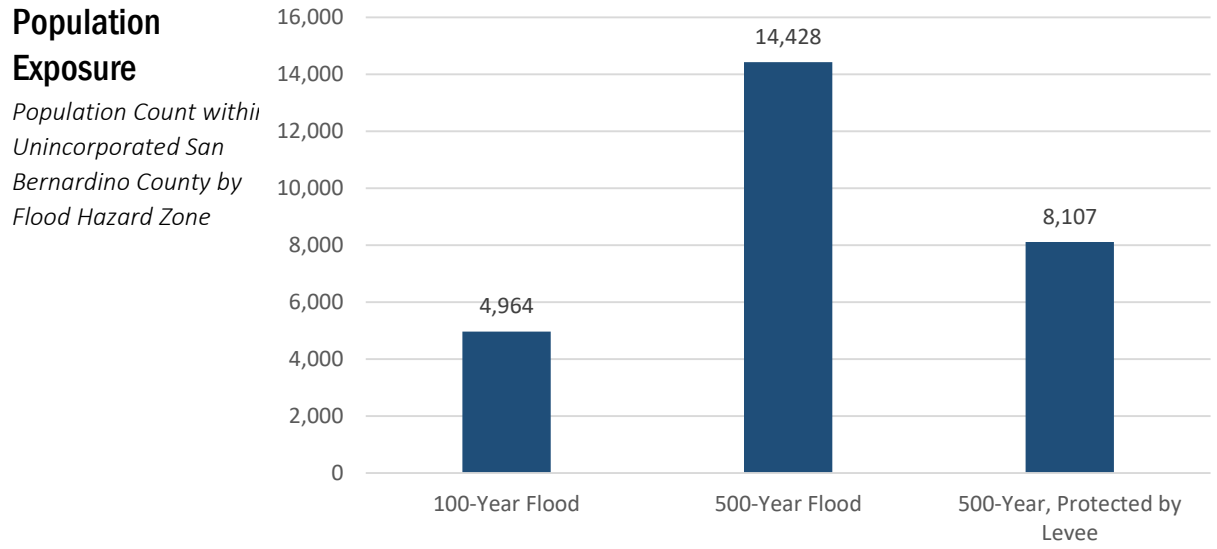


Figure 4-31: Population Exposed to NFIP Flood Zones

4.10.5.2 Residential Parcel Value with Flood Risk

The County's parcel layer was used as the basis for the inventory of improved residential parcels within the FEMA NFIP flood zones. In some cases, a parcel will be within in multiple flood zones. GIS was used to create centroids, or points, to represent the center of each parcel polygon – this is assumed to be the location of the structure for analysis purposes. The centroids were then overlaid with the floodplain layer to determine the flood risk for each structure. The flood zone in which the centroid was located was assigned to the entire parcel. This methodology assumed that every parcel with a square footage value greater than zero was developed in some way. Only improved parcels greater than $20,000 were analyzed. Table 4-16 shows the count of at-risk parcels and their improvement and land exposure values.

Flood Hazard Zone	Improved Parcel Count	Improvement Value Exposure ($000)	Land Value Exposure ($000)	Total Exposure ($000)
100-Year Flood	573	$94,219	$34,680	$128,899
500-Year Flood	3,750	$891,947	$343,736	$1,235,684
500-Year, Protected by Levee	2,393	$536,770	$212,098	$748,868
Grand Total	**$6,716**	**$1,522,936**	**$590,514**	**$2,113,451**

Table 4-16: Parcels Exposed to NFIP Flood Zones

Notes:
1-The table above does not display loss estimation results; the table exhibits total value at risk based upon the hazard overlay and San Bernardino County Assessor data.
2- Parcel information is for all county parcels with greater than $20,000 in assessed parcel improvement value only. The San Bernardino County Assessor's roles only provide spatial information on assessed improvement and land values.

While there are several limitations to this methodology, it does allow for potential loss estimation. It should be noted that the analysis may include structures in the floodplain that are elevated at or above the level of the base flood elevation, which likely will decrease potential flood damage to these structures. Also, it is important to remember that the County Assessor's values are well below actual market values; thus, the actual value of assets at risk may be significantly higher than those included herein.

4.10.5.3 Critical Facilities Exposure

Critical facilities data were overlain with flood hazard data to determine the type and number of facilities within the 100- and 500-year floodplain. Flooding poses numerous risks to critical facilities and infrastructure:

- Roads or railroads that are blocked or damaged can prevent access throughout the area and can isolate residents and emergency service providers needing to reach vulnerable populations or to make repairs.
- Bridges washed out or blocked by floods or debris from floods also can cause isolation.
- Creek or river floodwaters can back up drainage systems causing localized flooding.
- Floodwaters can get into drinking water supplies causing contamination.
- Sewer systems can be backed up causing waste to spill into homes, neighborhoods, rivers, and streams.

- Underground utilities can also be damaged.

Table 4-17 and Table 4-18 provide an inventory of critical facilities in the floodplain for City of Fontana and provides the locations of lifelines relative to the floodplain in the areas of the City of Fontana. With a total of 85 essential facilities, high potential losses, and transportation and lifeline structures located in either the 100- or 500-year flood zone, the impact to the community could be devastating if these critical facilities were damaged or destroyed during a flood event.

Infrastructure Type	100 Year Flood Zone	500 Year Flood Zone	500 Year Flood Zone, Protected by Levee	Total Feature Count
Essential Facility	1	11	3	15
EOC	0	0	0	0
Fire Station	0	0	1	1
Government Facility	0	0	0	0
Hospital	0	0	0	0
Police Station	0	0	0	0
School	1	11	2	14
High Potential Loss	7	46	7	60
Dam	0	0	0	0
Economic Element-Major Employer	0	0	0	0
Hazmat	6	36	4	46
Historic/Cultural Resource-Historic	0	0	0	0
Utility-Communication Facility	0	0	0	0
Utility-Electric Power Facility	0	0	0	0
Utility-Natural Gas Facility	0	0	0	0
Utility-Potable Water Facility	0	0	0	0
Utility-Waste Water Facility	0	0	0	0
Vulnerable Population-Adult Residential Care	0	1	1	2
Vulnerable Population-Child Care	1	6	2	9
Vulnerable Population-Flood Zone	0	0	0	0

Vulnerable Population-Foster/Home Care	0	1	0	1
Vulnerable Population-Mobile Home Park	0	0	0	0
Vulnerable Population-RV Park	0	0	0	0
Vulnerable Population-Senior Care	0	2	0	2
Transportation and Lifeline	2	8	0	10
Highway Bridge	2	8	0	10
Railway Bridge	0	0	0	0
Bus Facility	0	0	0	0
Rail Facility	0	0	0	0
Airport Facility	0	0	0	0
Grand Total	**10**	**65**	**10**	**85**

Table 4-17: Critical Facility Exposed to NFIP Flood Zones

Facility Type	100 Year	500 Year Flood Zone	500 Year Flood Zone, Protected by Levee	Total Mileage
Transportation and Lifeline	10	51	34	95
Railway	1	2	1	4
Roads	9	49	33	90
Interstate Highway	0	2	2	4
State / County Highway	3	8	7	17
Primary Highway	0	1	0	1
Local Road, Major	4	23	17	44
Local Road	2	14	3	18
Other Minor Road	0	1	1	2
Vehicular Trail	0	0	0	0
Cul-de-Sac / Traffic Circle	0	0	0	0

Ramp	0	0	3	4
Service Road	0	0	0	0
Total	**10**	**51**	**34**	**95**

Table 4-18: Lifelines Exposure to NFIP Flood Zones

4.10.5.4 Loss Estimation Results

The Hazus analysis was used to assess the risk from and vulnerability to flooding within City of Fontana. Hazus buildings data is aggregated to the census block level, known as the general building stock (GBS), which has a level of accuracy acceptable for hazard mitigation planning purposes. The following sections describe risk to and vulnerability of the GBS within the City of Fontana's mapped regulatory floodplain. The total value of exposed buildings and content within the City of Fontana's planning area was generated using Hazus.

Hazus calculates losses to structures from flooding by considering the depth of flooding and type of structure. Using historical flood insurance claim data, the software estimates the percentage of damage to structures and their contents by applying established depth-damage curves. Damage estimates are then translated to estimated dollar losses. The results are summarized in Table 4-19. An estimated $46 of damage could occur in the City of Fontana's regulatory floodplain if all flooding sources experienced a 100-year flood event. An all-encompassing event (all tributaries flooding to the NFIP 100-year floodzone) is estimated to cause losses of .00 percent of the total GBS within the City boundaries. An estimated $78,860 of damage could occur if all flooding sources experienced a 500-year flood event, representing .61 percent of the total GBS within the City boundaries.

While there are several limitations to the FEMA Hazus model, it does allow for potential loss estimation. It should be noted that the analysis may include structures in the floodplain that are elevated at or above the level of the base flood elevation, which will likely mitigate flood damage. Also, it is important to remember that the replacement costs are well below actual market values, thus, the actual value of assets at risk may be significantly higher than those included herein.

Flood Hazard Zone	Building Loss ($000)	Building Loss (% of Total Value)	Content Loss ($000)	Content Loss (% of Total Value)	Total Estimated Loss ($000)	Total Estimated Loss (% of Total Value)
100-Year	$ 11.00	0.0%	$ 31.00	0.0%	$ 46.00	0.0%
500-Year	$ 39,912.00	0.3%	$ 36,892.00	0.3%	$ 78,860.00	0.6%

Table 4-19: Flood Loss Estimation (Based on Depth) in NFIP Flood Zones

Note: *from section 4.10.3 'Hazus Flood Census Block Input Values' totals
1- Hazus Census Block Building Stock Value ($000):
2- Building Replacement Costs = $8,296,675
3- Content Replacement Cost = $4,644,791
4- Total Value = $12,941,466

Building Type	Building Replacement Costs ($000)	Building Replacement Cost (% of Total Value)	Content Replacement Cost ($000)	Content Replacement Cost (% of Total Value)	Total Estimated Loss ($000)	Total Loss Estimation (% of Total Value)	Total Value ($000)
Agricultural	-	0.00%	-	0.00%	-	0.00%	$6,640.00
Commercial	-	0.00%	$1	0.00%	$1	0.00%	$1,260,471.00
Educational	-	0.00%	-	0.00%	-	0.00%	$113,206.00
Government	-	0.00%	-	0.00%	-	0.00%	$126,836.00
Industrial	$7	0.00%	$28	0.01%	39	0.02%	$197,675.00
Religious	-	0.00%	-	0.00%	-	0.00%	$111,052.00
Residential	$4	0.00%	$2	0.00%	$6	0.00%	$11,125,586.00
Grand Total	**$11**	**0.00%**	**$31**	**0.00%**	**$46**	**0.00%**	**$12,941,466**

Table 4-20: 100-Year Flood Loss Estimation (Based on Depth) in NFIP Flood Zones by Occupancy Type

Note: *from section 4.10.3 'Hazus Flood Census Block Input Values' totals
1- Hazus Census Block Building Stock Value ($000):
2- Building Replacement Costs = $8,296,675
3- Content Replacement Cost = $4,644,791
4- Total Value = $12,941,466

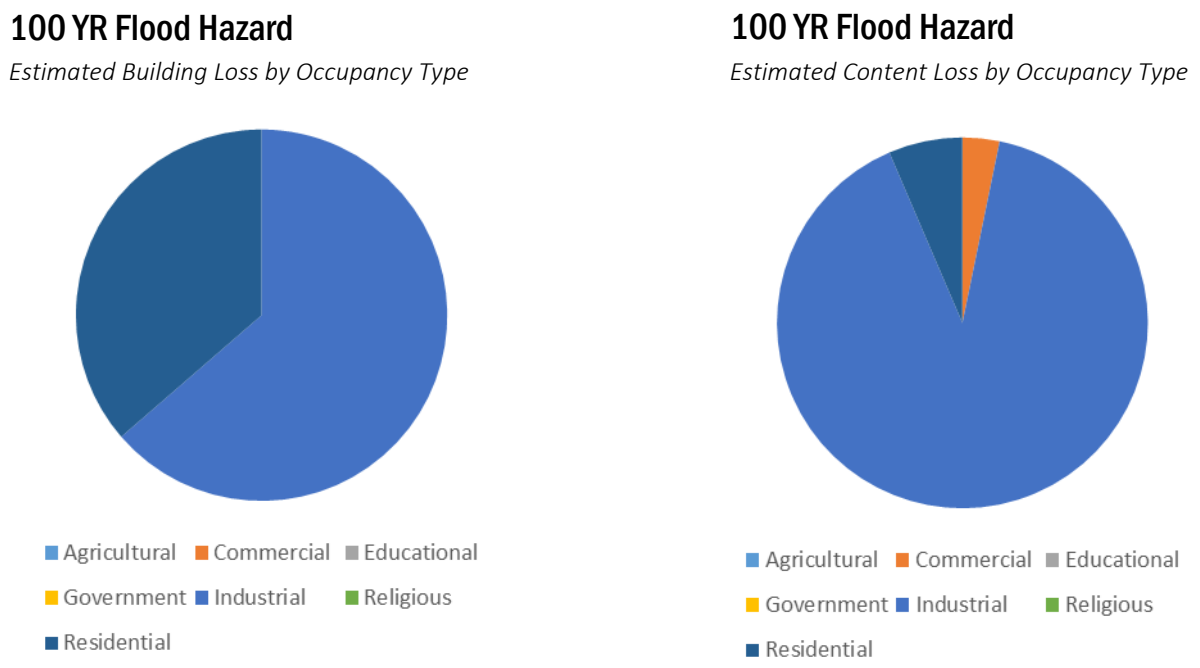
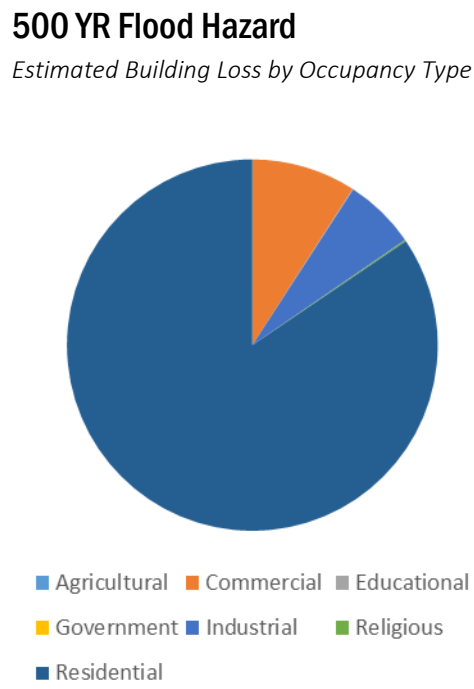


Figure 4-32: Total Building and Content Loss by Occupancy Type

Building Type	Building Replacement Costs ($000)	Building Replacement Cost (% of Total Value)	Content Replacement Cost ($000)	Content Replacement Cost (% of Total Value)	Total Estimated Loss ($000)	Total Loss Estimation (% of Total Value)	Total Value ($000)
Agricultural	$ 7.00	0.11%	$35.00	0.53%	$45.00	0.68%	$6,640.00
Commercial	$3,625.00	0.29%	$11,373.00	0.90%	$15,722.00	1.25%	$1,260,471.00
Educational	$23.00	0.02%	$135.00	0.12%	$178.00	0.16%	$113,206.00
Government	$ -	0.00%	$ -	0.00%	$ -	0.00%	$126,836.00
Industrial	$2,496.00	1.26%	$6,433.00	3.25%	$10,015.00	5.07%	$197,675.00
Religious	$52.00	0.05%	$491.00	0.44%	$550.00	0.50%	$111,052.00
Residential	$33,709.00	0.30%	$18,425.00	0.17%	$52,350.00	0.47%	$11,125,586.00
Grand Total	**$39,912**	**0.31%**	**$ 36,892**	**0.29%**	**$78,860**	**0.61%**	**$12,941,466**

Table 4-21: 500-Year Flood Loss Estimation (Based on Depth) in NFIP Flood Zones by Occupancy Type

Note: *from section 4.10.3 'Hazus Flood Census Block Input Values' totals
1- Hazus Census Block Building Stock Value ($000):
2- Building Replacement Costs = $8,296,675
3- Content Replacement Cost = $4,644,791
4- Total Value = $12,941,466



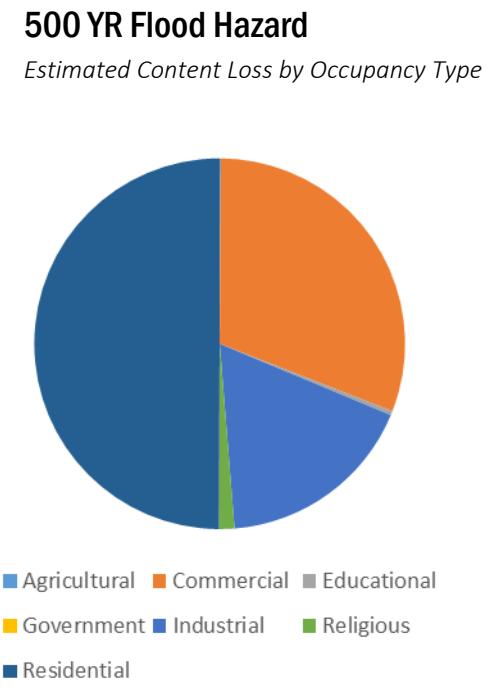


Figure 4-33: Total Building and Content Loss by Occupancy Type

4.10.6 Wildfire



Risk to the City of Fontana from wildfire is of significant concern. High fuel loads in the hills, along with geographical and topographical features, create the potential for both natural and human-caused fires that can result in loss of life and property. These factors, combined with natural weather conditions common to the area, including periods of drought, high temperatures, low relative humidity, and periodic winds, can result in frequent and sometimes catastrophic fires. During the May to October fire season the dry vegetation and hot and sometimes windy weather, combined with continued growth in the WUI areas, results in an increase in the number of ignitions. Any fire, once ignited, has the potential to quickly become large and out-of-control.

Potential losses from wildfire include human life, structures and other improvements, natural and cultural resources, quality and quantity of water supplies, cropland, timber, and recreational opportunities. Short and long-term economic losses could also result due to loss of business and other economic drivers associated with City of Fontana's summer season activities. Smoke and air pollution from wildfires can be a severe health hazard. In addition, catastrophic wildfire can create favorable conditions for other hazards such as flooding, landslides, and erosion during the rainy season.

Generally, there are three major factors that sustain wildfires and predict a given area's potential vulnerability to burn. These factors are fuel, topography, and weather.

(a) Fuel – Fuel is the material that feeds a fire and is a key factor in wildfire behavior. Fuel is generally classified by type and volume. Fuel sources are diverse and include everything from dead tree leaves, twigs, and branches, to dead standing trees, live trees, brush, and cured grasses. Manmade structures are also considered a fuel source, such as homes and other associated combustibles. The type of prevalent fuel directly influences the behavior of wildfire. Fuel is the only factor that is under human control. The City of Fontana has identified areas within that City that are considered "high fire severity" zones, and currently possess the highest vulnerability to wildfire.

(b) Topography – An area's terrain and slope affect its susceptibility to wildfire spread. Both fire intensity and rate of spread increase as slope increases due to the tendency of heat from a fire to rise via convection. The arrangement of vegetation throughout a hillside can also contribute to increased fire activity on slopes.

(c) Weather – Weather components such as temperature, relative humidity, wind, and lightning also affect the potential for wildfire. High temperatures and low relative humidity dry out fuels that feed wildfires, creating a situation where fuel will ignite more readily and burn more intensely. Thus, during periods of drought the threat of wildfire increases. Wind is the most treacherous weather factor. The greater the wind, the faster a fire can spread and the more intense it can be. Wind shifts, in addition to wind speed, can occur suddenly due to temperature changes or the interaction of wind with topographical features such as slopes or steep hillsides. As part of a weather system, lightning also ignites wildfires, often in difficult to reach terrain for firefighters.

Factors contributing to the high, widespread wildfire risk in City of Fontana include:

- Narrow and often one-lane and/or dead-end roads complicating evacuation and emergency response.
- Nature and frequency of ignitions; and increasing population density leading to more ignitions.
- Slope of the foothills;
- Residential development along the foothills;

4.10.6.1 Population at Risk

Wildfire risk is of greatest concern to populations residing in the high wildfire hazard zones. City of Fontana census block data was used to estimate populations within the hazard zones. There are a significant number of people living within the WUI described in the wildfire profiles. More than 26,000 residents in the city live within areas considered very high fire hazard and more than 12,000 residents live within a very high hazard area[6].

Population Exposure

Population Count by Wildfire Hazard Zone

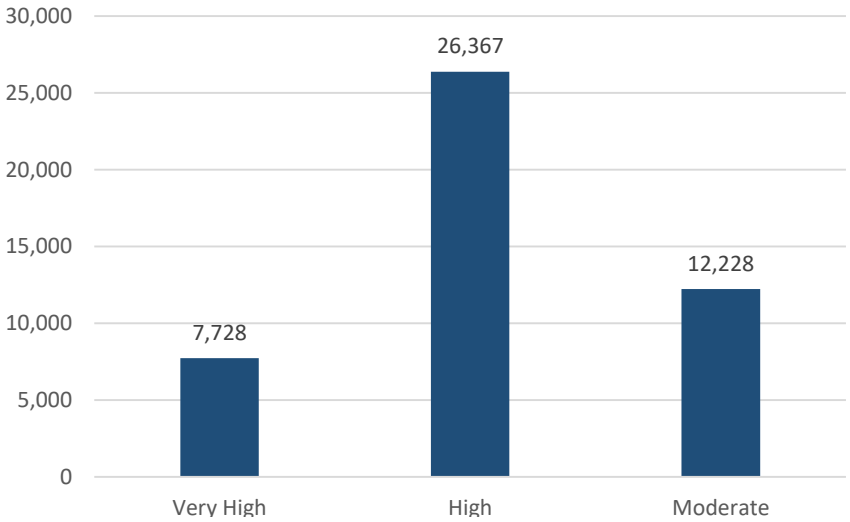


Figure 4-34: Population at risk from Wildfire Hazards

4.10.6.2 Residential Parcel Value at Risk

The County's parcel layer was used as the basis for the inventory of improved residential parcels. In some cases, a parcel will be within in multiple fire threat zones. GIS was used to create centroids, or points, to represent the center of each parcel polygon – this is assumed to be the location of the structure for analysis purposes. The centroids were then overlaid with the fire threat layer to determine the risk for each structure. The fire threat zone in which the centroid was located was assigned to the entire parcel. This methodology assumed that every parcel with a square footage value greater than zero was developed in some way. Only improved parcels were analyzed. Table 4-22 exhibits portions of City of Fontana that have significant assets at risk

[6] High and very high Fire Hazard Severity Zones as defined by the California Department of Forestry and Fire Protection (CAL FIRE).

to wildfire in the Moderate, High, Very High, Non-Wildland/Non-Urban, and Urban/Unzoned fire severity zones.

Fire Hazard Severity Hazard Zone	Improved Parcel Count	Improvement Value Exposure ($000)	Land Value Exposure ($000)	Total Exposure ($000)
Very High	2,163	$468,877	$181,708	$650,585
High	7,389	2,136,717	$737,354	$2,874,071
Moderate	3,343	$1,182,804	$393,933	$1,576,737
Non-Wildland/Non-Urban	429	$456,995	$142,990	$599,985
Urban Unzoned	30,920	$8,714,591	$3,281,583	$11,996,174
Total	**44,244**	**$12,959,984**	**$4,737,568**	**$17,697,552**

Table 4-22: Residential Buildings and Content at Risk from Wildfire

Note:
1-The table above does not display loss estimation results; the table exhibits total value at risk based upon the hazard overlay and San Bernardino County Assessor data.
2- Parcel information is for all county parcels with greater than $20,000 in assessed parcel improvement value only. The San Bernardino County Assessor's roles only provide spatial information on assessed improvement and land values.

4.10.6.3 Critical Facilities at Risk

Critical facilities data were overlain with fire hazard severity zone data to determine the type and number of facilities within each risk classification. Table 4-23 and Table 4-24 list the critical facilities in the High and Very High wildfire hazard zones for City of Fontana.

Infrastructure Type	High	Very High	Total Feature Count
Essential Facility	5	2	7
EOC	0	0	0
Fire Station	1	1	2
Government Facility	0	0	0
Hospital	0	0	0
Police Station	0	0	0
School	4	1	5
High Potential Loss	31	6	37
Dam	0	0	0
Economic Element-Major Employer	0	0	0
Hazmat	19	2	21

Historic/Cultural Resource-Historic	0	0	0
Utility-Communication Facility	4	1	5
Utility-Electric Power Facility	0	0	0
Utility-Natural Gas Facility	0	0	0
Utility-Potable Water Facility	0	0	0
Utility-Waste Water Facility	0	0	0
Vulnerable Population-Adult Residential Care	1	1	2
Vulnerable Population-Child Care	2	2	4
Vulnerable Population-Flood Zone	0	0	0
Vulnerable Population-Foster/Home Care	0	0	0
Vulnerable Population-Mobile Home Park	0	0	0
Vulnerable Population-RV Park	0	0	0
Vulnerable Population-Senior Care	5	0	5
Transportation and Lifeline	7	8	15
Highway Bridge	7	8	15
Railway Bridge	0	0	0
Bus Facility	0	0	0
Rail Facility	0	0	0
Airport Facility	0	0	0
Grand Total	**43**	**16**	**59**

Table 4-23: Critical Facility Exposure to Wildfire

Facility Type	High	Very High	Total Mileage
Transportation and Lifeline	99	31	130
Railway	2	-	2
Roads	97	**31**	128
Interstate Highway	9	5	13
State / County Highway	16	5	21
Primary Highway	0	-	0
Local Road, Major	14	4	18
Local Road	52	13	65
Other Minor Road	2	2	3
Vehicular Trail	-	1	1
Cul-de-Sac / Traffic Circle	-	-	-
Ramp	4	2	6
Service Road	-	-	-
Grand Total	**99**	**31**	**130**

Table 4-24: Lifelines with Wildfire Risk

4.10.7 Earthquake



Major Impacts from earthquakes are primarily the probable number of casualties and damage to infrastructure occurring from ground movement along a particular fault (USGS 2016). The degree of infrastructure damage depends on the magnitude, focal depth, distance from fault, duration of shaking, type of surface deposits, presence of high groundwater, topography, and the design, type, and quality of infrastructure construction.

To analyze the risk to City of Fontana residents, the Great Shakeout scenario was chosen modeled by the California Integrated Seismic Network (CISN). The 2008 Great Southern California Shake Out was based on a potential magnitude 7.8 earthquake on the southern San Andreas Fault— approximately 5,000 times larger than the magnitude 5.4 earthquake that shook southern California on July 29, 2008. Such an earthquake will cause unprecedented damage to Southern California—greatly dwarfing the massive damage that occurred in Northridge's 6.7-magnitude earthquake in 1994. The hazard foot print for this scenario was used to develop exposure results for population, critical facilities, and single family residential parcel values. FEMA Hazus analyses was used to conducted loss estimation for both scenarios and include building and content loss estimation results based on peak ground acceleration, peak ground velocity, and peak spectral acceleration modeled for the 7.8 earthquake on the San Andreas Fault.

Important to note: Building codes provide one of the best methods of addressing natural hazards. When properly designed, and constructed per code, the average building can withstand many of the impacts of natural hazards. Hazard protection standards for all new and improved or repaired buildings can be incorporated into the local building code to reduce future flood losses.

4.10.7.1 Population at Risk

According to the 2010 US Census, the population of City of Fontana is 196,069*.* Though rural residential construction is not particularly vulnerable to earthquakes, the chosen earthquake scenarios will directly or indirectly expose the entire population of City of Fontana to ground shaking. Depending on the time of day (the population differs based on employment opportunities) and exact location of the modeled epicenter, the earthquake scenarios could be experienced differently. Figure 4-35 exhibit the population totals in each modeled earthquake severity zone. Population location is based upon information taken during the 2010 U.S. Census.

Population Exposure

Population Count for Great Shakeout Scenario

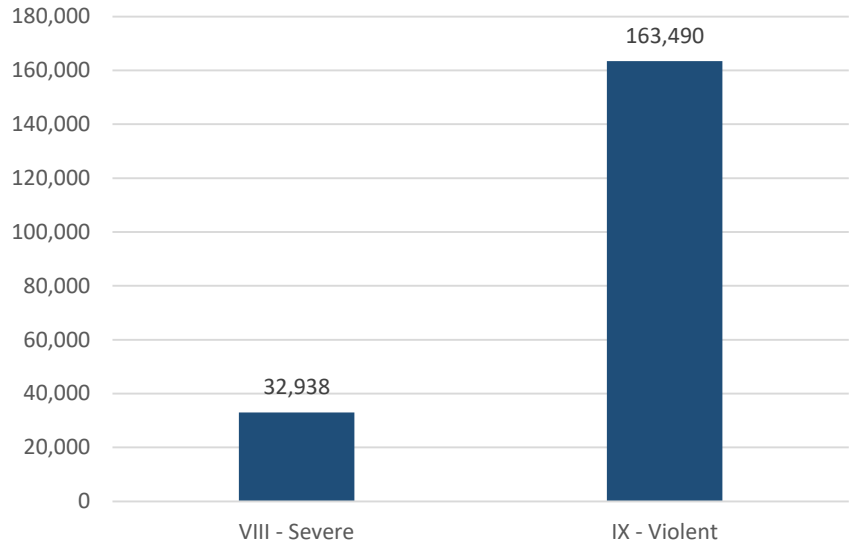


Figure 4-35: Population Exposure to the Great Shakeout EQ Shake Severity Zone

4.10.7.2 Residential Parcel Value at Risk

The County's parcel layer was used as the basis for the inventory of improved residential parcels. GIS was used to create centroids, or points, to represent the center of each parcel polygon – this is assumed to be the location of the structure for analysis purposes. The centroids were then overlaid with the shake severity zones to determine the at-risk structures. Only improved parcels greater than $20,000 were analyzed. The analysis indicates residential parcels the chosen scenario will experience similar, but different shaking patterns. The type and year of construction will greatly influence damage for structures subject to similar shaking. Table 4-25 shows the count of at-risk structures and their associated improvement and land exposure values.

Shake Severity Zone	Improved Parcel Count	Improvement Value Exposure ($000)	Land Value Exposure ($000)	Total Exposure ($000)
IV - Light	-	-	-	-
V - Moderate	-	-	-	-
VI - Strong	-	-	-	-
VII - Very Strong	-	-	-	-
VIII - Severe	8,169	$1,705,756	$636,228	$2,341,983
IX - Violent	36,073	$11,254,228	$4,101,340	$15,355,568

Total	**44,242**	**$12,959,984**	**$4,737,568**	**$17,697,552**

Table 4-25: Residential Parcel Value Exposure from Southern California Great Shakeout

Notes:
1-The table above does not display loss estimation results; the table exhibits total value at risk based upon the hazard overlay and San Bernardino County Assessor data.
2- Parcel information is for all county parcels with greater than $20,000 in assessed parcel improvement value only. The San Bernardino County Assessor's roles only provide spatial information on assessed improvement and land values.

4.10.7.3 Critical Facilities with Damage Potential

Earthquakes pose numerous risks to critical facilities and infrastructure. Seismic risks, or losses, that are likely to result from exposure to seismic hazards include:

- Casualties (fatalities and injuries).
- Utility outages.
- Economic losses for repair and replacement of critical facilities, roads, buildings, etc.
- Indirect economic losses such as income lost during downtime resulting from damage to private property or public infrastructure.

Roads or railroads that are blocked or damaged can prevent access throughout the area and can isolate residents and emergency service providers needing to reach vulnerable populations or to make repairs.

Linear utilities and transportation routes are vulnerable to rupture and damage during and after a significant earthquake event. The cascading impact of a single failure can have affects across multiple systems and utility sectors. Degrading infrastructure systems and future large earthquakes with epicenters near critical regional infrastructure could result in system outages that last weeks for the most reliable systems, and multiple months for others.

Table 4-26 provides an inventory of critical facility locations (points only) with earthquake exposure to the Great Shakeout Scenario. The building codes have been amended to include provisions for seismic safety at various bench marks years. Depending on "year built", each critical facility presented in the tables may have varying damage potential.

Infrastructure Type	Violent Shake Zone (IX)	Severe Shake Zone (VIII)	Very Strong (VII)	Strong Shake Zone (VI)	Total Feature Count
Essential Facility	-	-	11	74	85
EOC	-	-	-	1	1
Fire Station	-	-	1	5	6
Government Facility	-	-	-	-	-
Hospital	-	-	-	12	12
Police Station	-	-	-	2	2

School	-	-	10	54	64
High Potential Loss	-	-	48	448	496
Dam	-	-	-	1	1
Economic Element-Major Employer	-	-	-	-	-
Hazmat	-	-	29	348	377
Historic/Cultural Resource-Historic	-	-	-	-	-
Utility-Communication Facility	-	-	1	12	13
Utility-Electric Power Facility	-	-	-	-	-
Utility-Natural Gas Facility	-	-	-	-	-
Utility-Potable Water Facility	-	-	-	-	-
Utility-Waste Water Facility	-	-	-	-	-
Vulnerable Population-Adult Residential Care	-	-	6	29	35
Vulnerable Population-Child Care	-	-	7	37	44
Vulnerable Population-Flood Zone	-	-	-	-	-
Vulnerable Population-Foster/Home Care	-	-	1	3	4
Vulnerable Population-Mobile Home Park	-	-	-	-	-
Vulnerable Population-RV Park	-	-	-	-	-
Vulnerable Population-Senior Care	-	-	4	18	22
Transportation and Lifeline	-	-	6	29	35
Highway Bridge	-	-	6	28	34
Railway Bridge	-	-	-	1	1
Bus Facility	-	-	-	-	-
Rail Facility	-	-	-	-	-
Airport Facility	-	-	-	-	-
Grand Total	**-**	**-**	**65**	**551**	**616**

Table 4-26: Critical Facilities with EQ Risk Southern California Great Shakeout

HazMat Fixed Facilities

Although earthquakes are low probability events, they produce hazardous materials (HazMat) threats at very high levels when they do occur. Depending on the year built and construction of each facility containing HazMat, earthquake initiated hazardous material releases (EIHR) potential will vary. HazMat contained within masonry or concrete structures built before certain benchmark years reflecting code improvements may be of particular vulnerability.

Transportation

Earthquake events can significantly impact bridges which often provide the only access to some neighborhoods. Since soft soil regions generally follow floodplain boundaries, bridges that cross water courses are considered vulnerable. Since most of the City bridges provide access across water courses, most are at least somewhat vulnerable to earthquakes. Key factors in the degree of vulnerability are the bridge's age and type of construction which indicate the standards to which the bridge was built. Special attention will be paid to the multiple bridges that cross interstates. Interstates would serve as major emergency response and evacuation routes.

Utilities

Linear utilities and transportation infrastructure would likely suffer considerable damage in the event of an earthquake. Due to the amount of infrastructure and sensitivity of utility data, linear utilities are difficult to analyze without further investigation of individual system components. Table 4-27 provides best available linear data and it should be assumed that these systems are exposed to breakage and failure.

Facility Type	Strong (VI)	Very Strong (VII)	Severe (VIII)	Violent (IX)	Total Mileage
Transportation and Lifeline	0	0	89	521	610
Railway	0	0	0	20	20
Roads	0	0	89	501	590
Interstate Highway	0	0	0	28	28
State / County Highway	0	0	21	85	106
Primary Highway	0	0	0	9	9
Local Road, Major	0	0	2	191	194
Local Road	0	0	65	155	220
Other Minor Road	0	0	0	13	13
Vehicular Trail	0	0	0	1	1
Cul-de-Sac / Traffic Circle	0	0	0	0	0
Ramp	0	0	1	18	19
Service Road	0	0	0	0	0

Total	**0**	**0**	**89**	**521**	**610**

Table 4-27: Lifelines with EQ Risk; Southern California Great Shakeout Scenario

4.10.7.4 Loss Estimation Results

The Hazus Level 2 analysis was used to assess the risk from and vulnerability to earthquake shaking within City of Fontana. Hazus buildings data is aggregated to the census tract level for earthquake models, known as the general building stock (GBS), which has a level of accuracy acceptable for planning purposes. Where possible the GBS was enhanced using GIS data from the county as described previously. The following sections describe risk to and vulnerability of the GBS within the City of Fontana. Hazus calculates losses to structures from earthquake shaking by considering the amount of ground displacement and type of structure. The software estimates the percentage of damage to structures and their contents by applying established building fragility curves. Damage estimates are then translated to estimated dollar losses.

For each Great Shake Out Scenario ground shaking data (shakemaps) were acquired from CISN and imported into Hazus. The shakemap data consist of peak ground velocity, peak ground acceleration, peak spectral acceleration at 0.3 seconds, and peak spectral acceleration at 1.0 seconds. The earthquake module operates on census tracts that often include population and structures in the incorporated cities and the unincorporated area within a single tract. Due to this fact the results include census tracts that have a substantial portion of land within the incorporated area (loss estimates for some tracts will include structures in incorporated cities).

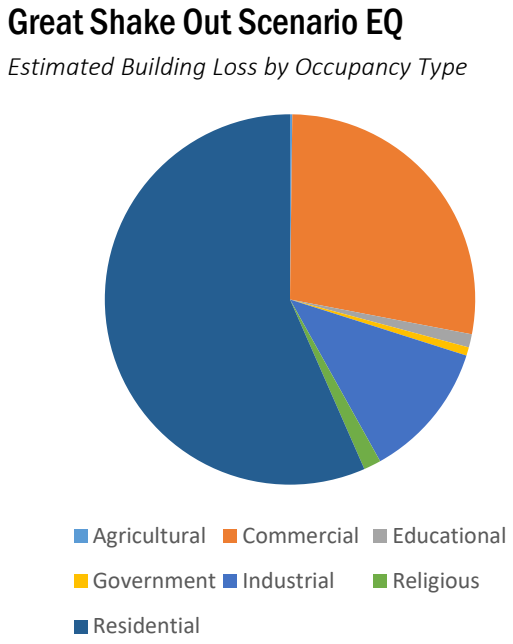
The results are summarized in Table 4-28 for the Great Shake Out Scenario. It is important to understand that the Hazus earthquake module uses the census tract as its enumeration unit rather than the more detailed census block. The loss estimation values for earthquakes are much higher than those of the flooding and dam failure due to this fact. The portions of incorporated areas included within boundary census tracts elevate the values due to the inclusion of additional GBS. Though the difference between census tracts and census blocks are extremely disparate, the most important summary information is the percent of loss estimation against the total value. Reading from the Table 4-28, residential building and content loss estimation from the Great Shake Out Scenario is $5.88 million dollars and 15 percent of the total value of the residential buildings. In Great Shake Out Scenario, residential damage will be the greatest. While there are several limitations to the FEMA Hazus model, it does allow for potential loss estimation. It is important to remember that the replacement costs are well below actual market values, thus, the actual value of assets at risk may be significantly higher than those included herein.

Building Type	Building Replacement Costs ($000)	Building Replacement Cost (% of Total Value)	Content Replacement Cost ($000)	Content Replacement Cost (% of Total Value)	Total Estimated Loss ($000)	Total Loss Estimation (% of Total Value)	Total Value ($000)
Agricultural	$9,292	14.7%	$3,018	4.8%	$12,310	19.5%	$63,100.00
Commercial	$1,297,347	20.9%	$406,913	6.5%	$1,704,260	27.4%	$6,216,466.00
Educational	$53,971	16.6%	$16,107	5.0%	$70,078	21.6%	$324,318.00

Government	$34,005	22.7%	$10,939	7.3%	$44,944	30.0%	$149,585.00
Industrial	$559,895	17.1%	$283,596	8.6%	$843,491	25.7%	$3,283,658.00
Religious	$70,717	21.4%	$22,916	6.9%	$93,633	28.3%	$330,628.00
Residential	$2,638,875	9.4%	$473,268	1.7%	$3,112,143	11.1%	$27,975,247.00
Grand Total	**$4,664,102**	**12.2%**	**$1,216,758**	**3.2%**	**$5,880,860**	**15.3%**	**$38,343,002**

Table 4-28: Estimated Building and Content Loss Great Shake Out Scenario EQ

Note: *from section 4.10.3 'Hazus Earthquake Census Block Input Values' totals
1- Hazus Census Block Building Stock Value ($000):
2- Building Replacement Costs = $23,496,052
3- Content Replacement Cost = $14,846,950
4- Total Value = $38,343,002



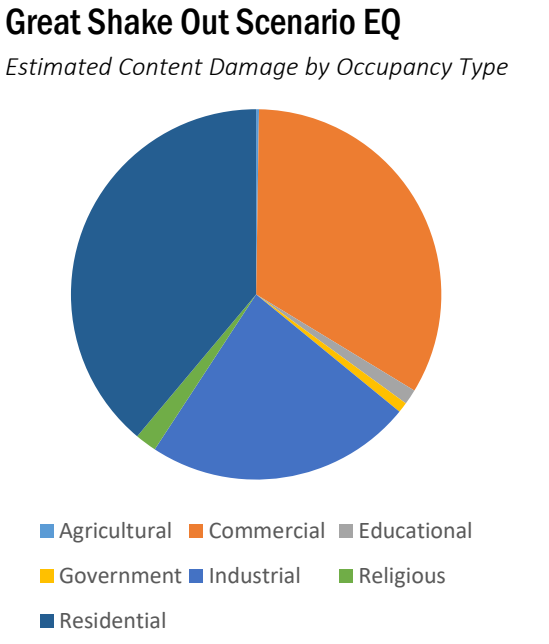


Figure 4-36: Estimated Building and Content by Occupancy Type

4.10.8 Landslide

Human activities that contribute to landslide events include altering the natural slope gradient, increasing soil water content, and removing vegetation cover. The best available predictor of where landside may occur is the location of previous occurrences. In addition, landslides are most likely to occur during severe weather events. The ground must be saturated prior to the onset of a severe weather event for a significant landslide to occur.



4.10.8.1 Population at Risk

Landslide risk is of greatest concern to populations residing in the high probability zones. There are about 700 residents susceptible to landslides as shown in Figure 4-37 below.

Population Exposure

Population Count for High Landslide Susceptibility

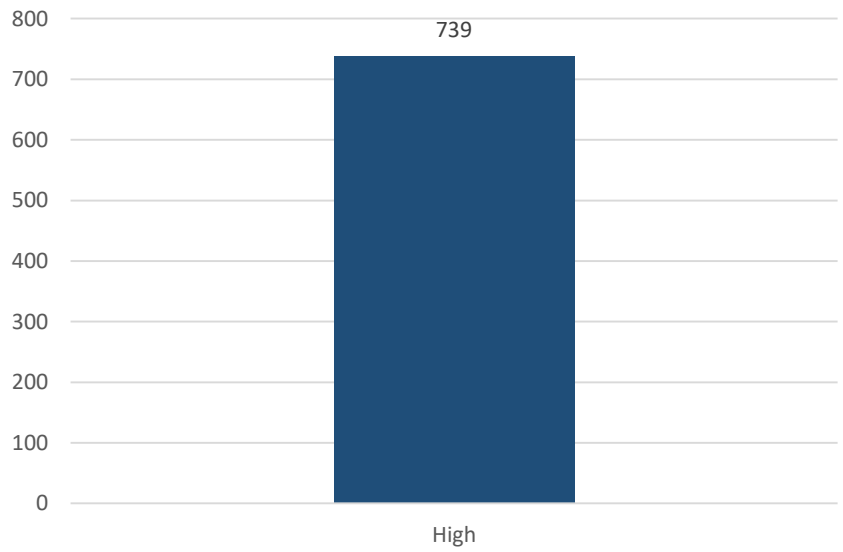


Figure 4-37: Population Exposure to Landslides

4.10.8.2 Residential Parcel Value at Risk

The County's parcel layer was used as the basis for the inventory of improved residential parcels. In some cases, a parcel will be within in multiple fire threat zones. GIS was used to create centroids, or points, to represent the center of each parcel polygon – this is assumed to be the location of the structure for analysis purposes. The centroids were then overlaid with the landslide threat layer to determine the risk for each structure. The landslide threat zone in which the centroid was located was assigned to the entire parcel. This methodology assumed that every parcel with a square footage value greater than zero was developed in some way. Only improved

parcels were analyzed. Table 4-29 below shows the improvement value exposure and the land value exposure.

Landslide Risk	Improved Parcel Count	Improvement Value Exposure ($000)	Land Value Exposure ($000)	Total Exposure ($000)
High	107	$ 21,048	$ 7,388	$ 28,436

Table 4-29: Improved Residential Parcel Exposure

Notes:
1-The table above does not display loss estimation results; the table exhibits total value at risk based upon the hazard overlay and San Bernardino County Assessor data.
2- Parcel information is for all county parcels with greater than $20,000 in assessed parcel improvement value only. The San Bernardino County Assessor's roles only provide spatial information on assessed improvement and land values.

4.10.8.3 Critical Facilities at Risk

Critical facilities data were overlain with landslide hazard severity zone data to determine the type and number of facilities within each risk classification. Table 4-30 and Table 4-31 list the critical facilities in the landslide hazard zones for City of Fontana.

Infrastructure Type	Total Feature Count
Essential Facility	0
EOC	0
Fire Station	0
Government Facility	0
Hospital	0
Police Station	0
School	0
High Potential Loss	0
Dam	0
Economic Element-Major Employer	0
Hazmat	0
Historic/Cultural Resource-Historic	0
Utility-Communication Facility	0
Utility-Electric Power Facility	0
Utility-Natural Gas Facility	0

Utility-Potable Water Facility	0
Utility-Waste Water Facility	0
Vulnerable Population-Adult Residential Care	0
Vulnerable Population-Child Care	0
Vulnerable Population-Flood Zone	0
Vulnerable Population-Foster/Home Care	0
Vulnerable Population-Mobile Home Park	0
Vulnerable Population-RV Park	0
Vulnerable Population-Senior Care	0
Transportation and Lifeline	3
Highway Bridge	3
Railway Bridge	0
Bus Facility	0
Rail Facility	0
Airport Facility	0
Grand Total	**3**

Table 4-30: Critical Facilities at Risk of Landslide

Facility Type	Total Mileage
Transportation and Lifeline	2
Railway	0
Roads	2
Interstate Highway	0
State / County Highway	0
Primary Highway	-
Local Road, Major	0
Local Road	1
Other Minor Road	0

Vehicular Trail	-
Cul-de-Sac / Traffic Circle	-
Ramp	0
Service Road	-
Grand Total	**2**

Table 4-31: Transportation and Lifelines at Risk of Landslide

4.10.9 Climate Change/Drought



Vulnerable populations should receive special attention when assessing the community's vulnerability to climate change. For example, care and sheltering during extreme heat conditions must be provided for vulnerable populations such as the elderly. According to information provided by FEMA, extreme heat is defined as temperatures that hover 10 degrees or more above the average high temperature for the region and last for several weeks. Heat kills by taxing the human body beyond its abilities. In a normal year, about 175 Americans succumb to the demands of summer heat. According to the National Weather Service (NWS), among natural hazards, only the cold of winter—not lightning, hurricanes, tornados, floods, or earthquakes—takes a greater toll. In the 40-year period from 1936 through 1975, nearly 20,000 people were killed in the United States by the effects of heat and solar radiation. In the heat wave of 1980, more than 1,250 people died.

Since climate change can exacerbate other hazards, consideration should also be given to populations living in high hazard wildfire and flood zones. Drought caused by climate change will also affect the entire population. Agricultural yields will suffer and drier vegetation creates more fuel for wildfires.

4.10.9.1 Critical Facilities

The location of infrastructure, its current condition and its susceptibility to climate impacts are important factors to consider when accessing the vulnerability of critical facilities to climate change.

Infrastructure provides the resources and services critical to community function. Roads, rail, water (pipes, canals, and dams), waste (sewer, storm, and solid waste), electricity, gas, and communication systems are all needed for community function. Climate change increases the likelihood of both delays and failures of infrastructure. Delays and failures can result from climate-exacerbated hazards such as flooding, fire, or landslide, as well as increased demand, load, or stress on infrastructure systems that can result from climate change (e.g., heat impacts on roadway durability). Temporary delays or outages can result in inconvenience and economic loss, while larger failures can lead to disastrous economic and social effects. (California Adaptation Planning Guide)

Three to five more heat waves will be experienced by 2050, increasing to 12 to 16 in the western parts of the region to more than 18 to 20 in the eastern parts of the region. The age and construction method of essential facilities, transportation systems, lifeline utility systems, high potential loss facilities and hazardous material facilities will determine how they stand up to the effects of climate change such as extreme heat days.

The City of Fontana offers access to five city facility locations throughout the community for the public to provide emergency shelter during times of extreme weather or hardship. In the event of a heat wave or extreme heat day, the air conditioning and cooling capability of the building will play a critical role in the facility's ability to act as a cooling center for the community.

4.10.9.2 Loss Estimation Results

Climate Change can potentially affect critical infrastructure in a variety of ways.

- Temperature and heat waves: Heat can stress infrastructure, altering maintenance needs, particularly for roadways.
- Precipitation, intense rainstorms, and landslide: Increased frequency of landslides could be seen throughout the City, especially in areas already identified as high risk such as Jurupa Hills and Coyote Canyon.
- Wildfire: Dry vegetation as a result of high heat can increase the risk of wildfire on Jurupa Hills and Coyote Canyon.

4.10.10 Terrorism



Translating most manmade hazard profiles into meaningful geospatial information is difficult at best. Instead, the planning team will use an asset-specific approach. Population, facilities, systems and assets will be prioritized and assessed in this vulnerability assessment.

Special consideration should be given to areas with high density and those containing vulnerable populations (young, old, and those whose primary language is not English).

Facilities at high risk may include gathering places, critical facilities/ transportation and lifelines and utilities.

4.10.10.1 Population at Risk

Since terrorism can happen anytime, anywhere, 100% of the population is vulnerable to terrorism. In particular, people with access and functional needs, the elderly and the very young are especially vulnerable because they often rely heavily on others in their daily lives. Persons with English as a second language are also vulnerable as they may not receive warnings or notifications related to an incident in their primary language.

4.10.10.2 Critical Facilities Exposure

Critical facilities may include essential facilities (such as hospitals, police and fire stations, evacuation centers, etc.), transportation systems, lifeline utility systems, high potential loss facilities (such as nuclear power plants, dams and military installations, etc.), and hazardous material facilities.

Gathering facilities should also receive special attention. Places of mass gathering not only present terrorists with potential opportunities for mass casualties, symbolism and high impact media coverage, they pose a broad range of security challenges for their owners and operators. (Committe n.d.) The National Counter Terrorism Committee has noted that places of mass gathering have been specifically identified by religious and political extremists as attractive targets.

Places of mass gathering incorporate a diverse range of facilities including, but not limited to, sporting venues, shopping and business precincts, tourism/entertainment venues/attractions, hotels and convention centers, major events and public transport hubs. This also includes significant one off events. (Committe n.d.)

		Criteria
Very High	*10*	Very High – One or more major weaknesses have been identified that make the asset extremely susceptible to an aggressor or hazard. The building lacks redundancies/ physical protection and the entire building would be only functional again after a very long period of time after the attack.
High	*8-9*	High – One or more major weaknesses have been identified that make the asset highly susceptible to an aggressor or hazard. The building has poor redundancies/ physical protection and most parts of the building would be only functional again after a long period of time after the attack.
Medium High	*7*	Medium High – An important weakness has been identified that makes the asset very susceptible to an aggressor or hazard. The building has inadequate redundancies/ physical protection and most critical functions would be only operational again after a long period of time after the attack.
Medium	*5-6*	Medium – A weakness has been identified that makes the asset fairly susceptible to an aggressor or hazard. The building has insufficient redundancies/physical protection and most part of the building would be only functional again after a considerable period of time after the attack.
Medium Low	*4*	Medium Low – A weakness has been identified that makes the asset somewhat susceptible to an aggressor or hazard. The building has incorporated a fair level of redundancies/physical protection and most critical functions would be only operational again after a considerable period of time after the attack
Low	*2-3*	Low – A minor weakness has been identified that slightly increases the susceptibility of the asset to an aggressor or hazard. The building has incorporated a good level of redundancies/physical protection and the building would be operational within a short period of time after an attack.
Very Low	*1*	Very Low – No weaknesses exist. The building has incorporated excellent redundancies/physical protection and the building would be operational immediately after an attack.

Table 4-32: FEMA Vulnerability Rating

Section 5. Community Capability Assessment

The City of Fontana strives to protect and maintain the health, safety and welfare of the community on a day-to-day basis, and takes extra measures to reduce the impacts of natural or man-made hazards. The City can use a variety of different tools, assets, and authorities to effectively prepare for, mitigate against, respond to, and recover from emergencies and disasters. These include voluntary and mandatory measures; individual and community efforts; private and public actions; and preventive as well as responsive approaches. Example mitigation activities include educating citizens, enforcing building and development codes, constructing capital improvement projects, adopting plans, establishing incentive programs, and improving emergency preparedness and response.

The capabilities available to the City of Fontana fall into the following broad categories: Agencies and People; Existing Plans; Regulations, Codes, Policies, and Ordinances; Mitigation Programs; and Financial Resources. Identifying and documenting these capabilities provides the basis for developing future mitigation opportunities and how they can be implemented within existing City programs.

5.1 Active Mitigation Programs

Below is a list of on-going Mitigation programs for the City of Fontana:

Building Code Updates

The City's building codes are updated by amending and adopting the latest California Building Standards Code (CBSC). The CBSC is based on nationally recognized model codes, and is updated and published triennially. The Department of Building & Safety is responsible for updating the City's building codes.

City Website

The Police Department – Emergency Services section of the City's Website contains information on emergency preparedness, response, and recovery. The site also provides information on volunteer programs and provides links to other organizations with additional information.

Community Emergency Response Team (CERT)

The CERT Program is designed to train residents to assist safety personnel and city staff in the event of a major disaster. Volunteers from the community are trained in first aid, light search and rescue, minor fire suppression, and other skills that are critical in the first few hours of a disaster. The Fontana Police Department – Emergency Services Unit is responsible for the CERT program.

Continuous Improvement of Fire Services

There are many aspects to the planning and improvement process that is in place within the Fire Department to ensure an adequate and progressive level of management, fire suppression, training, support, and fire prevention services within the City. In addition, the Fire Department interfaces with different departments within the City to ensure the safety and efficiency of

emergency response services. Some of the main elements that pertain to the continuous improvement of fire services are listed below.

- FIRE MASTER PLANNING - The San Bernardino County Fire Department, which provides fire services to the City, has through the California Environmental Quality Act (CEQA) review process and the development entitlement review process has determined the need for improving response times to different portions of the city. The result has been the constructing and staffing of additional fire stations, such as most recently in 2007 with Fire Station 79 in the northwestern portion of Fontana, which houses a four-person engine company, and which was built shortly after the area was annexed into the City.
- DEVELOPMENT IMPACT FEES – These have been established by the City with assistance from the San Bernardino County Fire Department, and they use a fee per square foot or fee per dwelling unit schedule, based on the use, and are collected for all new construction projects. The fees that are collected are used to provide funding for additional Fire Department facilities and equipment.
- FIRE PREVENTION – The Office of the Fire Marshal within the Fire Department is involved throughout the planning and construction process of all new development, reviewing and approving the design of fire protection systems, educating the community about fire safe practices, and conducting investigations of all fires, including wildland fires. Fire Prevention places conditions of approval on projects when necessary to incorporate fire safety mitigation measures for projects with special hazards, such as those in wildfire prone areas.
- STREET IMPROVEMENTS - City streets and roads are engineered in a safe, reliable manner in order to allow emergency vehicles to respond quickly. Numerous alternative routes, secondary points of access, cul-de-sac turnarounds, and other features that improve traffic circulation are planned into new development and redevelopment during the City's internal review process, which includes the Fire Department. Things that could obstruct or impair emergency access are mitigated as well, such as with the installation of security gate override systems, and the Installation of traffic signal pre-emption devices at critical signalized intersections.
- WATER IMPROVEMENTS - The City is served by five municipal water Districts, namely the San Gabriel Valley Water District (Fontana Water Company), the Cucamonga Valley Water District, Marygold Mutual Water Company, and the West Valley Water District. As development or redevelopment occurs, improvements are made to the City's water system that serve to provide the water necessary for firefighting operation. The Fire Department communicates sets requirements for water flow and pressure, locations and types of fire hydrants, and performs inspections to ensure that they are built according to what has been approved.

The San Bernardino County Fire Department is responsible for continuous improvement of fire services in coordination with other City and County departments.

Disaster Preparedness Training

The Police Department – Emergency Services Unit provides city staff with the appropriate National Incident Management System (NIMS) and Standardized Emergency Management System (SEMS) training in order to improve the ability of city personnel to respond effectively during a major emergency and/or disaster. The Police Department also trains Non- Police Department Employees on Emergency Procedures Protocol, with emphasis on the concepts of "Evacuate,

Lock-Down, Lock-Out, Fire, and Active Shooter" scenarios. Along with training, the unit conducts: Earthquake Duck, Cover and Hold On and building evacuation drills.

The Emergency Services Unit also provides disaster preparedness and awareness training to the community.

Elimination of URM Buildings

The City does not have a proactive program to either demolish or seismically retrofit the city's remaining URM Buildings. Currently, 68 URM buildings remain within the City's jurisdiction. If a URM Building's occupancy changes to an intensified use (e.g. a retail store changes to a assembly use (movie theater, church, etc.) the URM Building would need to be seismically retrofitted. The Department of Building & Safety is responsible for this program.

Emergency Communications Services (ECS)

A group of volunteer amateur radio operators that provide continuous supplemental and emergency backup communications in order to free up the public safety radio system and to assist with the local response to emergencies. The Fontana Police Department – Emergency Services Unit is responsible for the ECS program.

Fontana Leadership Intervention Program (FLIP)

The Fontana Leadership Intervention Program (FLIP) is founded upon a partnership between the City of Fontana Police Department, Fontana School Police and Fontana Unified School District. The program offers "at-risk" teenagers an opportunity to experience a unique educational environment which will discourage them from engaging in future criminal activity. The Police Department is responsible for this program.

National Flood Insurance Program (NFIP)

A federal program enabling property owners in participating communities to purchase insurance protection against losses from flooding. This insurance is designed to provide an insurance alternative to disaster assistance to meet the escalating costs of repairing damage to buildings and their contents caused by floods. Participation in the NFIP is based on an agreement between local communities and the Federal Government that states if a community will adopt and enforce a floodplain management ordinance to reduce future flood risks to new construction in Special Flood Hazard Areas, the Federal Government will make flood insurance available within the community as a financial protection against flood losses. The Building and Safety and Engineering Departments assist with this program.

Neighborhood Watch

The Neighborhood Watch Program is a crime and vandalism prevention program. Through education, it teaches citizens how to help themselves by identifying and reporting suspicious activity in their neighborhoods. In addition, it provides citizens with the opportunity to make their neighborhoods safer and improve the quality of life. The Police Department is responsible for this program.

Tree Maintenance Program

The City's tree maintenance program provides for the care of all trees located on City property or within the City's public right-of-way. The Public Works Department has developed and maintains a current tree inventory of all City owned trees including detailed site characteristics and work histories for each tree. These tree records are updated on a routine basis. All trees contained in the City inventory are pruned on a 5 year cycle. At that time the trees are assessed for hazards. Dead, diseased and broken branches are removed. Corrective pruning is also done at this time such as thinning of the tree's branch structure to allow winds to pass through the tree. This corrective pruning is also done to promote an overall healthy shape and tree canopy, and healthy growth. All work is performed in accordance with the Best Management Practices developed by the International Society of Arborists (ISA), ANSI A300 Standards and ANSI Z133.1 Safety Standards.

URM Buildings Tracking System

State law mandated local jurisdictions develop an inventory of URM Buildings located within their jurisdiction; provide said inventory to the State in January 1990; and notify the owners of these buildings that their building was on the inventory that was sent to the State. The City complied with this mandate. The Department of Building & Safety is responsible for tracking the status of the URM Buildings.

Weed Abatement/Rubbish Removal

Each year during two separate periods weed abatement and rubbish removal is carried out within the City. Initial inspections are performed at the beginning of each season, after which re-inspections are performed and properties that have not abated weeds and other hazards are put on a list. Work orders are then sent to an abatement contractor, who then does the work and bills the City. The City in turn recuperates the costs via the property tax roll through the County Assessor's office.

City standards also mandate the removal of all rubbish from parkways, sidewalks and private property, including items such as accumulations of household trash, windblown debris, discarded and abandoned objects, and other items that can present a hazard such as wood, cardboard, appliances, pallets, plastic items, vehicles, recyclables, and tires. Household hazardous materials or wastes, such as paint, chemicals, oil, anti-freeze, pesticides, cleaners, etc., are also required to be disposed of at the City's Household Hazardous Waste facility in accordance with State and local regulations. The Code Enforcement Division of the Fontana Police Department is responsible for Weed and Rubbish abatement in coordination with other City and County departments.

5.2 Local Planning and Regulatory Capabilities

The City of Fontana has numerous plans that concentrate on disaster management. These plans are significant since they support the adopted City policies and ordinances during the time of a natural disaster. Some of the plans are directly related to hazard mitigation, such as the Noise and Safety Element of the General Plan, and the Sustainability and Resilience chapter of the General Plan as well. . Other plans focus on different aspects of disaster management such as emergency response. Still others do not focus directly on disaster issues but have

implications that are relevant to hazard mitigation, such as plans related to spending on public facilities and storage of hazardous materials. This section reviews City plans and highlights the elements that are relevant to disaster mitigation and can support future implementation of mitigation actions identified in these plans. The following are the plans that concentrate on disaster management:

- The General Plan
- The Noise and Safety Element
- The Circulation Element
- The Zoning and Development Code-Fire Hazard Overlay District
- The Master Storm Drainage Plan
- The Capital Improvement Plan
- The Municipal Storm Water Quality Management Plan
- Emergency Operations Plan (EOP)
- Emergency Standard Operating Procedures (SOPs)

In addition to the general plan, the information in Table 5- is used to construct mitigation actions aligned with existing planning and regulatory capabilities of the City of Fontana. Planning and regulatory tools typically used by local jurisdictions to implement hazard mitigation activities are building codes, zoning regulations, floodplain management policies, and other City programs or planning documents.

Hazard	Plan/Program/ Regulation	Responsible Agency	Comments
Multi-Hazard	Fontana/California Building Code 2016 Edition	Building Dept.	The City has adopted the California Building Code 2016 Edition, Volumes 1 and 2. The California Building codes protect buildings to the extent possible from natural occurring hazards.
Multi-Hazard	City of Fontana Municipal Code	All City Depts. as well as contractual City representatives	The City of Fontana Municipal Code.
Drought /Climate Change	Model Water Efficient Landscape Ordinance (MWELO)	Engineering Dept., Building Dept., Planning Dept., Public Works Dept.	The MWELO promotes the conservation and efficient use of water.

Hazard	Plan/Program/ Regulation	Responsible Agency	Comments
Drought	California Drought Contingency Plan	California Dept. of Water Resources	Section VI provides an overview of drought preparedness strategies from the California Water Plan Update (see separate entry). Section VII provides a brief description of local, utility, and State agency drought response roles. Situation and assessment reports will be distributed to appropriate agencies and will be posted on the DWR Drought website (www.water.ca.gov/drought).
Flood	Flood Resistant Construction	Building and Safety Dept.	The 2016 California Building Codes stipulates existing Flood Resistant Construction standards.
Flood	National Flood Insurance Program (NFIP) Administration	The Building Official is the Floodplain Administrator	NFIP makes federally backed flood insurance available to homeowners, renters, and business owners in participating communities. As a participating member of the NFIP, the City is dedicated to protecting homes of more than 60 policies currently in force.
Climate Change	2015 San Gabriel Valley Water Management Plan		The Water Management Plan is a tool that provides a summary of anticipated supplies and demands for the years 2015 to 2040
Multi-Hazard	2014 Water Shortage Contingency Plan	San Gabriel Valley Water Company	San Gabriel Valley Water Company has a "Water Shortage Plan," in place, programs whereby actions will go into effect if a catastrophic interruption, mandatory prohibition or other causes occur.
Climate Change	The Sustainable Communities and Climate Protection Act of 2008		Looks to reduce GHG emissions through coordinated transportation and land use planning with the goal of more sustainable communities. Regional targets are established for GHG emissions reductions from passenger vehicle use by the sustainable communities strategy (SCS) established by each metropolitan planning organization (MPO).

Table 5-2: Planning and Regulatory Capabilities

5.3 Administrative and Technical Mitigation Capabilities

The City has adopted codes and regulations to govern development, construction, and land use activities. They include construction standards, use limitations, study requirements and mitigation requirements which help directly or indirectly minimize the exposure of people and property loss or injury resulting from disasters. As such, the regulations, codes, policies, and ordinances are effective tools which to use to reduce the amount of damage or harm arising from disasters. This plan provides an opportunity to review existing regulations to determine if they are effective or whether they need to be revised in certain areas to more adequately prevent loss or injury from

disasters. The following are the regulations, codes, policies, and ordinances that are related to the hazardous mitigation plan.

- Zoning and Development Regulations
- Subdivisions Regulations
- California Building Code (Consisting of the California Building Code, Electrical, Mechanical Code, Plumbing Code, Fire Code, Existing Building, and other.)
- Fontana Fire Protection District Fire Code
- Fontana Municipal Code Chapter No. 12 Article No. 2 – Flood Control
- Fontana Municipal Code Chapter No. 12 Article No. 3 – Flood Control
- Fontana Municipal Code Chapter No. 26 Article No. 5 – Master Storm Drainage Plan
- Fontana Municipal Code Chapter No. 16 Article No. 19 – Social host of minors accountability and unruly gathering accountability

The State of California Department of Forestry and Fire Protection (CalFIRE) has created, and continues and revise, a map of all Fire Hazard Severity Zones (FHSZ) within the State, including those in the City, as discussed in Section 4. The Very High FHSZ can then be used to enforce enhanced regulations from the State Fire Marshal published within the California Building Code, pertaining to ignition and ember resistive building construction, within the City. Also for reference are other ordinances and codes that are in place in nearby jurisdictions, such as the County of San Bernardino, that contain requirements in hazardous fire overlay areas for fire resistive construction, fuel modification areas, development property line setbacks, vegetation clearances from roadways and buildings.

Table 5-2 provides a summary of administrative and technical capabilities organized by staff type and department. It is important to understand current administrative and technical capabilities before developing mitigation activities.

Administrative and Technical Capabilities Table:

Staff/Personnel Resources	Dept. / Agency	Comments
Development Services Staff- Planning, Building and Safety, Engineering (with land use / land development knowledge)	Community Development Department	Includes Land Use Planning, Planning Commission, Building & Safety, Code Enforcement, and Enforcement Programs relating to Land Use and Development.
Planners, Engineers and Public Works staff (with natural and/or human caused hazards knowledge)	Community Development Department, Public Works Department and other Development Services staff	Fire Prevention can assist as well.

Staff/Personnel Resources	Dept. / Agency	Comments
Engineers, Building and Safety staff and other professionals trained in building and/or infrastructure construction practices (includes building inspectors)	Community Development and Development Services as well as local utility agencies.	
Floodplain Management	Building and Safety Official	The Building and Safety Official is the Floodplain Administrator as per FEMA Region IX and NFIP data and requirements
Personnel skilled in Geographic Information Systems (GIS) and/or FEMA's HAZUS program	Information Technology Department	
Grant writers or fiscal staff to handle large/complex grants	City Grant Writing Team	Numerous types of federal, state, local, and private grants have been administered for mitigation at the local level in California, to include Capital Improvement Projects to assist in the mitigation of natural and man-made disasters.
Construction Equipment (Heavy-Duty)	Public Works Dept.	The Public Works Department maintains large pieces of equipment available for construction and moving and removal of earthen material
Emergency Management Personnel	Police and Fire Department	*State Office of Emergency Services Access* *Mobile Emergency Personnel*
Care and Sheltering	*Regional Red Cross Personal (local office in 10600 Trademark Parkway, Suite 406 Rancho Cucamonga, CA 91730* City of Fontana Community Services Department	Care and sheltering during extreme heat conditions, will provide sheltering and support services for fire victims. Cooling Center Coordination also provided by the City of Fontana.

Table 5-3: Administrative and Technical Capabilities

5.4 Local Fiscal Capabilities

City of Fontana:

Department	Role in Disaster Mitigation and Management
Mayor and City Council	• Adopts polices, codes & standards, & approves plans • Disaster Council Members • Communicate with other Elected Officials • Consult with and assist in making important decisions with the Director of Emergency Services that might affect overall policy direction • Proclaim the existence of a local emergency
City Manager	• Director of Emergency Services • Disaster Council Member
Building & Safety	• Regulates construction & occupancy of all residential, commercial & industrial buildings in order to ensure life, fire & health safety • Conducts post-disaster safety assessments • Coordinates mitigation programs • Assist with damage assessment for shelter sites, residents, & businesses throughout the City
City Clerk	• Maintains city public records • Assist with the Local Emergency Proclamation and Resolution process
Community Development	• Processes land use applications • Processes new developments or modifications/upgrades to existing structures • Responsible for Business Licenses • Inspect and post as necessary all damaged buildings, and determine if they should be evaluated • Estimate the extent of damage/cost of repair of structures • Assist in the Preliminary Damage Assessment with local, state, and federal organizations to determine losses and recovery needs • Coordinate the city Damage Assessment Response Team assignments for the city facilities, possible shelter sites, and structures throughout the community • Assist with the review and permit process of the repair or replacement of damaged structures
Community Services	• Provides programs, services & events offered include: special events, cultural arts programs, education & recreation classes, health & wellness activities, marketing & public communication efforts, youth & afterschool programs, sports, aquatics, facility management & environmental & conservation programs & fund development. • Assist with the set-up & operation of a shelter

Engineering	• Responsible for designing & managing the City's public infrastructure • Also responsible for implementation of the City's Capital Improvement Program, management of the City's signal operation & maintenance program, land development activities, & transportation & interchange development • Conduct a damage assessment of City signal system • Assist in determining safe evacuation routes • Assist with inspections/liaison within utility companies • Assist with damage surveys within the City

Fire Protection District	• The Fire Protection District is responsible for the full complement of fire protection services including emergency medical response, fire suppression, hazardous materials response, heavy rescue, & many other types of emergency services. In addition, the Fire District provides emergency medical coordination, training, fire prevention services including permits & inspections, fire investigation, public information & education, vehicle maintenance, all together with administrative support.
Human Resources	• Responsible for employee recruitment and safety • Maintenance of employee benefits • Assist with the sheltering and feeding of disaster workers and their families • Coordinate with American Red Cross and Community Services personnel to arrange for and conduct feeding and sheltering for DSW's and their families • Handle questions and problem solve in the areas of health benefits
Information Technology	• Provides technology support to all departments • Repair computer and phone equipment and services, as necessary, throughout city facilities • Assist with computer and phone set-up in the EOC and provide additional information technology support as needed
Management Services	• Provides the internal financial functions in accordance with City Council's policies • Financial support, response, and recovery for the emergency/disaster • Support the response effort and the acquisition, transportation, and mobilization of resources
Police Department	• Provides for the prevention of crime, preservation of peace & a safe environment • Coordinates all Emergency Services functions and activities • Responsible for the City Watch – Telephone Emergency Notification System • Maintains the mobile command center unit • Coordinates CERT & ECS volunteer programs

Public Works	• Responsible for maintaining Fontana's infrastructure & completing construction projects related to the City's Capital Reinvestment Program • Maintains the City's sewer, storm drains, recycling, waste water reclamation, environmental programs, streets, trees, parks, streetscapes, graffiti abatement, public buildings, fleet maintenance & vehicle replacement • Organized into three Divisions: Parks & Landscape, Support Services, & Utilities & Streets • Coordinate emergency response with all the departments and agencies involved with the event

Table 5-4: Local Fiscal Capabilities

5.5 San Bernardino County Capabilities

This section contains a summary of San Bernardino County programs and capabilities organized by hazard type. It is important to understand current County capabilities before developing mitigation activities and implementation documentation. Understanding these listed County capabilities may reduce duplication of efforts at the local level. In addition, it is also noteworthy to have this information for mutual-aid preparedness.

5.5.1 Multi-Hazard Capabilities

5.5.2 County Wildfire Mitigation Programs

San Bernardino County has one of the most comprehensive set of programs to mitigate the potential for catastrophic wildfires in the Nation. There is no other jurisdiction that has the comprehensive, multi-agency cooperation and coordination as is found in San Bernardino County.

5.5.3 County Flood Mitigation Programs

The flood mitigation programs that were established by San Bernardino County Flood Control District to protect life and property. These programs are typically designed to mitigate flood hazards to life and property, and critical infrastructure. Also, these programs can be used as a public education and information capability for local jurisdictions.

Hazard	Program	Responsible Agency	Comments
Flood	Flood Area Safety Taskforce (FAST)	Flood Control District	The FAST Organization stresses liaison with the communities, provides for community education and information, and places emphases on Community and city partnerships. For more information see County OES website or hazard mitigation plan.
Flood	Alluvial Fan Task Force	Alluvial Fan Task Force	The Task Force reviews the state of knowledge regarding alluvial fan floodplains, determine future research needs, and, if appropriate, develop recommendations relating to alluvial fan floodplain management, with an emphasis on alluvial fan floodplains that are being considered for development. For more information see County OES website or hazard mitigation plan.
Flood	StormReady	Flood Control District	San Bernardino County is a StormReady County. For more information see County OES website or hazard mitigation plan.

Table 5-5: County Flood Mitigation Programs

5.5.4 San Bernardino County Public Education and Alert Programs

San Bernardino County Fire District hosts a number of different public education and alert programs.

Hazard	Program	Responsible Agency	Comments
Multi-Hazard	MAST	Multiple	Mountain Area Safety Taskforce (MAST) has a substantial public education component. All agencies participate with the goal to have no one on the mountain uneducated about creating a thinner forest which is a more fire safe forest. For more information on MAST see County OES website or hazard mitigation plan.
Multi-Hazard	CERT	SB County Fire District	The Community Emergency Response Team (CERT) Program educates people about disaster preparedness and trains them in basic response skills. For more information on the CERT program see County OES website or hazard mitigation plan.
MULTI-HAZARD	Listos	SB County Fire District	Listos, which means “ready” in Spanish, is a twelve-hour disaster preparedness course created specifically for the Spanish-speaking community and is delivered entirely in Spanish. The program is intended to be adaptable, flexible and culturally relevant. This means participants are encouraged to involve the entire family and accommodations are made for young children. San Bernardino County Fire, Office of Emergency Services currently partners with the Cities of Fontana and Rialto to bring Listos to their communities. For more information see County OES website or hazard mitigation plan.
MULTI-HAZARD	California Disaster Corps	SB County Fire District	The Disaster Corps is a first-in-the-nation effort to professionalize, standardize and coordinate highly trained disaster volunteers statewide. This program initiative was built collaboratively in partnership with California Volunteers from the ground up through public-private partnerships and with a wide range of subject matter experts. For more information see County OES website or hazard mitigation plan.
MULTI-HAZARD	TENS	SB County Fire District	Telephone Emergency Notification Systems (TENS) During an emergency, public safety can be a direct function of the speed and accuracy of the dissemination of information. This is particularly important during emergencies that require evacuations. To that end the Board of Supervisors dedicated General Fund money in 2003 to the implementation of an automated phone dialing system that calls telephones in specific geographic areas of concern. All areas of San Bernardino County have all been preprogrammed so that during an emergency, the specific target group can be notified as quickly as possible. For more information see County OES website or hazard mitigation plan.

Hazard	Program	Responsible Agency	Comments
MULTI-HAZARD	ECS	SB County Fire District	The Emergency Communications Service (ECS) is a volunteer group providing front-line communications, technical and logistical support to the San Bernardino County Fire Department and Office of Emergency Services. Their primary mission is to support County Fire, County Government and other local agencies in time of disaster. In addition, ECS has provided telecommunications and event support to other County departments including Public Health, Behavioral Health, Public Works, Pre-School Services, Sheriff's Search and Rescue and other County Departments. For more information see County OES website or hazard mitigation plan.
Multi-Hazard	AM Radio	SB County Fire District	Community Based AM Radio Transmitters The Fire Safe Councils discovered the existence of very inexpensive but very effective community based AM radio transmitters. The transmitters are very effective for providing information and updates to a community that is either preparing for a community emergency or just had one. As a delivery modality they are extremely reliable because in most all emergencies the AM radio in your car is likely to be operational particularly when the electricity is out in your house.
Multi-Hazard	IPAWS	SB County Fire District	During an emergency, alert and warning officials need to provide the public with life-saving information quickly. The Integrated Public Alert and Warning System (IPAWS) is a modernization and integration of the nation's alert and warning infrastructure and will save time when time matters most, protecting life and property. Federal, State, Territorial, Tribal, and local alerting authorities can use IPAWS and integrate local systems that use Common Alerting Protocol (CAP) standards with the IPAWS infrastructure. IPAWS provides public safety officials with an effective way to alert and warn the public about serious emergencies using the Emergency Alert System (EAS), Wireless Emergency Alerts (WEA), the National Oceanic and Atmospheric Administration (NOAA) Weather Radio, and other public alerting systems from a single interface.

Table 5-5.4: Public Education and Alert Programs

5.6 Local, State and Federal Fiscal Resources

This section identifies the financial tools or resources that the City could potentially use to help fund mitigation activities. Fiscal capabilities include City-specific as well as state and federal resources. In addition, to augment local resources which are also potential funding programs

and resources that are provided by state and federal agencies and programs which can be used for local hazard mitigation activities.

General Fund Sources: The City of Fontana relies on several major revenue sources in the General Fund budget, including: Sales Taxes, Property Taxes, Interest and Rentals, Franchise Fees and Business Related Revenue.

Sales Taxes: The City of Fontana receives a 1% share of all taxable sales generated within its borders. In addition to this 1% share, the City receives a portion of an additional State-wide voter-approved ½% sales tax amount which is dedicated for public safety purposes.

Property Taxes: The County of San Bernardino levies a tax of 1% on the assessed valuation of property within the County. The City of Fontana receives approximately 3.24% of this 1% levy for property located within the City limits. Additionally, Property Tax in Lieu of VLF is the result o f a permanent backfill from the State's General Fund in 2004 to make up for the reduction in the Vehicle License Fee (VLF) rate from 2% to 0.65%. After FY 2004/05, this revenue increases/decreases annually in proportion to the change in assessed valuation in that jurisdiction.

Franchise Fees: The City imposes franchise fees on a variety of utilities for the use of city streets and rights-of-way.

Business Related: Businesses in the City are subject to a municipal business tax which is generally based on gross receipts and varies by business category. This category also includes Transient Occupancy Tax (TOT) which is levied on room rentals at motels and hotels at 8%.

Permits & Fees for City Services: The City of Fontana currently issues permits and collects fees for services. Fees and permits under this section are not taxes, and the amount collected cannot exceed the costs of these services.

Capital Improvement Plan: The City of Fontana's Seven-Year Capital Improvement Plan is adopted with the Operating Budget in June of each year. It matches funding sources with capital expenditures over a seven- year schedule, and serves as a planning tool to coordinate financing and scheduling of major projects undertaken by the City. The document is dynamic and consequently must be revised annual to address changing needs, priorities and financial conditions.

Federal Funding Sources: The City of Fontana understands that many of the Hazard Mitigation Measures outline in this plan are beyond the capabilities of the local government to implement instantaneously. The Federal Government offers a wide range of funding and technical assistance programs to help make communities more sustainable and livable. Many of these are listed below. Programs with potential effectiveness in the construction or reconstruction of housing and businesses, public infrastructure (transportation, utilities, water and sewer) and supporting overall hazard mitigation and community planning objectives are emphasized here. Some programs are disaster-specific, activated by a presidential declaration of a major disaster or emergency under the provisions of the Stafford Act.

Hazard Mitigation Grant Program (HMGP): This FEMA administered program provides grants to states and local governments following a presidential disaster declaration. The funds can be used to implement long-term hazard mitigation measures. According to the Disaster Mitigation Act

of 2000, communities must have a Local Hazard Mitigation Plan (LHMP) approved to receive HMGP funds. Funds will be granted only to projects that conform to local and state mitigation plans. Federal grant funds can provide 75% of a project's total cost; other sources must provide 25% matching funds. After any federally declared disaster, up to 20% of the amount spent by FEMA on disaster response and relief costs is made available in the form of HMGP grants to communities in the affected state.

Pre-Disaster Mitigation Program (PDM): FEMA developed the PDM program to coincide with the requirements of the Disaster Mitigation Act of 2000 that requires communities to prepare local hazard mitigation plans, such as this plan. Funds are authorized by Congress on an annual basis for PDM competitive grants, technical assistance and program support. FEMA grants can fund 75 % of a project; other non-federal sources must provide 25 % matching funds. Funds are only granted to communities with an approved LHMP, and supported projects must b e identified in those plans.

INTENTIONAL BLANK PAGE

Section 6. Mitigation Strategy

6.1 Mitigation Overview

The intent of the mitigation strategy is to provide City of Fontana with a guidebook to future hazard mitigation administration. The mitigation strategy is intended to reduce vulnerabilities outlined in the previous section with a prescription of policies and physical projects. This will help City of Fontana staff to achieve compatibility with existing planning mechanisms, and ensures that mitigation activities provide specific roles and resources for implementation success.

The City of Fontana mitigation strategy is derived from an in-depth review of the existing vulnerabilities and capabilities outlined in previous sections of this plan, combined with a vision for creating a disaster resistant and sustainable community for the future. This vision is based on informed assumptions, recognizes both mitigation challenges and opportunities, and is demonstrated by the goals, objectives, and projects outlined below. The mitigation measures identified under each objective are prioritized by the Local Advisory Task Force and include an implementation plan for each measure. The measures were individually evaluated during discussions of mitigation alternatives and the conclusions used as input when priorities were decided. All priorities are based on consensus of the Task Force.

Mitigation measures are categorized generally for all hazards and specifically for the four high risk hazards facing the City that were extensively examined in the risk assessment section: earthquakes, terrorism, wildfire, and wind surge.

6.2 Mitigation 5 Year Progress Report

The table below contains the status of the Mitigation Projects and Programs for the city selected by the planning team during the creation of the 2012 Hazard Mitigation Plan:

Mitigation Action	Completed	On-Going	Deleted	Deferred	Comments
Storm Drain Installation Project	Completed				
Wildland Fire Access Project			Deleted		No funding available, project will be revisited another time.
San Sevaine Drainage Project	Completed				
Fire Resistive Construction Project		On-Going			
Alternate EOC Project		On-Going			
Elimination of URM Buildings Program		On-Going			
Disaster Preparedness Training Program		On-Going			

City Facilities Fire Detection Systems Upgrade Project	Completed				
Update Building Codes for Earthquakes Program		On-Going			
Weed Abatement/Rubbish Removal Program		On-Going			
URM Buildings Tracking System Program		On-Going			
Minimize Flood Hazards Program		On-Going			
Decreasing Hydrologic Impact		On-Going			
Minimize Seismic Hazards Program		On-Going			
Minimize Fire Hazards Program		On-Going			Redefined in 2010 as "Continuous Improvement of Fire Services."
EOC Upgrade Project		On-Going			

Table 6-1: Mitigation Five year Progress Report

6.3 Mitigation Goals and Objectives

Goals and objectives discussed in this section help describe what actions should occur, using increasingly narrow descriptors. Long-term goals are developed which can be accomplished by objectives. To achieve the stated objectives "mitigation actions" provide specific measurable descriptors on how to accomplish the objective. The goals, objectives, and actions form the basis for the development of a Mitigation Action Strategy and specific. mitigation projects to be considered for implementation.

The process consists of 1) setting goals and objectives, 2) considering mitigation alternatives, 3) identifying strategies or "actions", and 4) developing a prioritized action plan resulting in a mitigation strategy.

The following section provides an overview of the Mitigation Goals and Objectives for profiled hazards, Wildfire, Earthquake, Flood, Drought, Terrorism, and Climate Change for the City of Fontana. These goals were compiled from various sources including the City of Fontana General Plan.
for a detailed description of the process used by the County Planning Team)The City of Fontana Local Advisory Task Force reviewed the hazard profiles and risk assessment results as a basis for developing the mitigation goals, objectives, and projects. Mitigation goals are defined as general guidelines that explain what a community wants to achieve in terms of hazard and loss prevention. Goal statements are typically long-range, policy-oriented statements representing community-wide visions. Objectives are statements that detail how a community's goals will be achieved. Typically, objectives define strategies or implementation steps to attain identified goals. Using Fontana's General Plan as a guideline, the Task Force developed goals with associated objectives to reduce or avoid long-term vulnerabilities to the identified hazards. Lastly, based on the goals and objectives, the Task Force developed a list of potential mitigation projects.

All Hazards – Project 1

Goal: Promote hazard mitigation as an integrated public policy

Objective: Continually build operational linkages among hazard mitigation, disaster preparedness and recovery programs within the public and private sectors

Title: **Promote Hazard Mitigation**

Description: Foster public and private partnerships to improve hazard mitigation program coordination and collaboration in the City of Fontana

Action(s): Identify and engage organizations within Fontana that have programs or interest in natural hazard mitigation. Involve private businesses throughout the City in mitigation planning efforts.

All Hazards – Project 2

Goal: *Increase the emergency management capability of the City of Fontana*

Objective: *Build a new stand-alone Emergency Operations Center (EOC)*

Title: **New Emergency Operations Center (EOC)**

Description: The City's current EOC location is the Police Department meeting room. The technology and communication resources within the EOC are out dated. For an activation, training, or exercise, the room has to be set up and equipment brought in and the room does not provide enough space for EOC operations.

Action(s): Explore the options for funding and a location of a new stand-alone EOC. One funding possibility is the FEMA Emergency Operations Center (EOC) Grant Program.

All Hazards – Project 3

Goal: *Increase the emergency management capability of the City of Fontana*

Objective: *Locate/build an alternate Emergency Operations Center (EOC)*

Title: **Alternate Emergency Operations Center (EOC)**

Description: Reduce severity of disasters in the event of the primary EOC becoming disabled by building structure failure of the Police Department. Currently, the alternate EOC is not equipped by the City and is located in an old Fire Department building that is not built to current earthquake building standards.

Action(s): Locate/build and equip an adequate backup EOC at an earthquake safe location that is convenient for city personnel to staff.

Al Hazards – Project 4

Goal: *Increase the emergency management capability of the City of Fontana*

Objective: *Pursue available grant funding to implement mitigation measures*

Title: **Pre-disaster Mitigation Grant Project**

Description: Identify and pursue funding opportunities to develop and implement local and city wide mitigation activities. Review FEMA grant application and establish internal procedure to streamline the application process.

Action(s): Review FEMA grant application and establish internal procedure to streamline the application process. Apply for grant to fund mitigation projects identified in the Local Hazard Mitigation Plan (LHMP).

All Hazards – Project 5

Goal: *Increase public awareness of risks from all natural and human-made hazards*

Objective: *Educate the public to increase their awareness of hazards, emergency response, and recovery*

Title: **Public Outreach**

Description: Through various public events/activities, educate the public on local hazards and emergency preparedness.

Action(s): (a) Support the efforts and education of people with disabilities to prepare for disasters (b) Train citizens to deal with emergencies at times when professional responders will be overwhelmed.

All Hazards – Project 6

Goal: *Improve coordination and communication with relevant community organizations*

Objective: *Establish a partnership among all levels of government and the business community*

Title: **Community Emergency Preparedness Coordination**

Description: Coordinate preparedness efforts with other agencies.

Action(s): Through community committee meetings, begin emergency preparedness coordination with relevant community organizations. Identify opportunities to partner with citizens, private contractors, and other jurisdictions to increase availability of equipment and manpower and increase the efficiency and efficacy of emergency response efforts.

All Hazards – Project 7

Goal: *Reduce the potential risk from private and governmental facilities in the event of a disaster.*

Objective: *Incorporate as appropriate requirements from the State of California's most recent land use regulations regarding the hazard mitigation planning process (Government Code 65302 and 8685.9)*

Description: Government Code 65302.6 requires the following elements to be included in the hazard mitigation plan:

(1) An initial earthquake performance evaluation of public facilities that provide essential services, shelter, and critical governmental functions.

(2) An inventory of private facilities that are potentially hazardous, including, but not limited to, multiunit, soft story, concrete tilt-up, and concrete frame buildings.

(3) A plan to reduce the potential risk from private and governmental facilities in the event of a disaster.

Government Code 8685.9 requires that the state share shall not exceed 75 percent of total state eligible costs unless the local agency is located within a city, county, or city and county that has adopted a local hazard mitigation plan as part of the safety element of its general plan. In that situation, the Legislature may provide for a state share of local costs that exceeds 75 percent of total state eligible costs.

Action(s):
The City of Fontana will maintain an updated and adopted hazard mitigation plan as part of the safety element of the General Plan. The Hazard Mitigation Plan will be a working document that provides City staff and the community guidelines in working towards educational and policy driven mitigation procedures.

Wildfire

Wildfire Mitigation – Project 1

Goal: Increase the emergency management capability of the City of Fontana

Objective: Continually evaluate and improve emergency response services

Title: **Develop Fire Strategic Master Plan**

Description: The Fire Master Plan will ensure adequate resources to respond quickly to wildfires in their initial stages for quick control and mitigation of wildfires. In addition, Fire Prevention resources will be funded in order to develop wildfire awareness public education programs.

Action(s): The Fontana Fire Protection District will develop a strategic master plan which will allocate funds for future facilities, equipment, and staffing; and will strategically plan for the utilization of these resources in the most efficient and cost effective manner.

Wildfire Mitigation – Project 2

Goal: Significantly reduce life loss and injuries; Minimize damage to structures and property as well as disruption of essential services and human activities

Objective: Ensure that enforcement of relevant state regulations and local ordinances significant reduce life loss and injuries; Encourage new development to occur in locations avoiding or minimizing exposure to hazards and enhance design requirement to improve resiliency in future disasters; Research, develop, and promote adoption of cost effective buildings and development laws, regulations and ordinances exceeding the minimum levels need for life safety

Title: **Locally adopt California Fire Code and California Building Code**

Description: Every three years the California Fire Code (CFC,) with fire safety requirements for buildings of all types and uses; and the California Building Code (CBC,) with fire resistive construction requirements and exiting and life safety requirements; together with a body of other building standards and administrative codes are updated and adopted by the State of California.

These codes can be adopted and amended locally to address specific fire hazards within a local community.

Action(s): The Fontana Fire District and the City Building and Safety Department work together to amend and update the California Fire and Safety Code and the California Building Code concurrently every three years, and present the ordinances to the City Council and Fire District Board for adoption.

Wildfire Mitigation – Project 3

Goal: Significantly reduce life loss and injuries; Minimize damage to structures and property as well as disruption of essential services and human activities

Objective: Ensure that enforcement of relevant state regulations and local ordinance significant reduce life loss and injuries; Identify and mitigate imminent threats to life safety; encourage life and property protection measures for all communities and structures located in hazard areas.

Title: **Annual Fire Inspection Program**

Description: The Annual Fire Inspection Program will fund the resources to perform inspections on privately or publicly owned land where fuel modification or fuel reduction zones exist, to ensure a safe buffer zone from fuels in Fire Hazard Severity Zones and any other wildfire prone areas.

Action(s): The Fontana Fire District will develop a fee funded annual fire inspection program for the businesses within the community, including critical facilities and particularly those in the wildfire hazard areas.

Wildfire Mitigation – Project 4

Goal: Increase public awareness of risks from all natural and human-made hazards

Objective: Educate the public to increase their awareness of hazards, emergency response, and recovery

Title: **Continued implementation of a wildfire safety and preparedness public education program**

Description: A public fire safety education program can reach residents and other high risk groups with important information about home fire safety, wildfire preparedness, exit drills and evacuation, and other important safety topics

Action(s): The Fontana Fire Protection District will develop public education programs that encompass wildfire safety awareness and preparedness, at schools or community centers in fire hazard areas, in order to educate residents and business owners. Elements of some programs already in existence, such as “Ready, Set, Go!" can be used for this.

Wildfire Mitigation – Project 5

Goal: Significantly reduce life loss and injuries; Minimize damage to structures and property as well as disruption of essential services and human activities

Objective: Ensure that mitigation measures are incorporated into repairs, major alterations, new development and redevelopment practices, especially in areas subject to substantial hazard risk; Encourage new development to occur in locations avoiding or minimizing exposure to hazards and enhance design requirement to improve resiliency in future disasters

Title: **Improve fire access within fire hazard areas**

Description: Fire access roads provide necessary vehicular access for firefighting, structure protection, mop-up, and other tactical operations. These roads are built around the perimeter of new housing developments, adjacent to open naturally vegetated land within wildfire risk areas.

Action(s): The Fontana Fire Protection District will develop local standards for specifications and maintenance of fire access roads serving the perimeter of new developments, and survey existing fire access roads to evaluate the condition of these roads and whether these need improvements or repairs.

Flooding

Flooding Mitigation – Project 1

Goal: To capture peak stormwater flows to provide enhanced flood protection from 100 year-flood events for approximately 300 acres and provide secondary water quality beneficial uses.

Objective: Build the West Fontana Channel from Banana Basin to Cherry Avenue and Beech Avenue Crossings.

Title: **West Fontana Channel**

Description: The West Fontana Channel Stormwater Flood Reduction Project will expand and line the existing West Fontana Channel from Juniper Avenue to Banana Basin. Construction will include: channel deepening and concrete lining, box culverts, stub outs, low flow bio swale, and associate improvements.

Action(s): City will pay $9,550,000, as their fair Share of the West Fontana Channel project, to the San Bernardino County Flood Control District to construct the West Fontana Channel Stormwater Flood Reduction Project.

Flooding Mitigation – Project 2

Goal: To intercept upstream drainage flows and route them through a new storm drain system.

Objective: Install storm drain and sewer improvements on Banana Avenue from Santa Ana Avenue to Jurupa Avenue.

Title: **Banana Storm Drain**

Description: Storm water flows along Slover Avenue west of Banana Avenue to a natural low point half way between Banana Avenue and Calabash Avenue causing flooding to some properties. Install storm drain and sewer improvements on Banana Avenue from Santa Ana

Avenue to Jurupa Avenue. These improvements are consistent with the City's Master Storm Drainage Plan.

Action(s): This is a joint cooperative project with the County of San Bernardino. The City is the lead for design and construction. The project design phase has been completed. Construction began in May 2017 with an estimated completion date of November 2017.

Flooding Mitigation – Project 3

Goal: This project will intercept surface drainage flows and route them through a new storm drain system.

Objective: Storm Drain construction on Cypress Avenue from Foothill Boulevard to Orange Way

Title: **Cypress Storm Drain**

Description: Construct Storm Drain facility on Cypress Avenue from Foothill Boulevard to Orange Way. The improvements are also consistent with the City's Master Storm Drainage Plan**.**

Action(s): The design will begin in October 2017. Construction is estimated to begin March 2019 with an estimated completion date of October 2019.

Flooding Mitigation – Project 4

Goal: Improve infrastructure to drain Ventana and Arboretum.

Objective: Design and construction of master storm drain line crossing the I-15 Interchange and connecting to Hawker-Crawford Channel.

Title: **Duncan Canyon RCB/PH I-Line A**

Description: Storm drain-basin work in the Duncan Canyon area. Design and construction of master storm drain line crossing the I-15 Interchange and connecting to Hawker-Crawford Channel. This section of the storm drain will remain dry until future development comes into the area.

Action(s): The project construction is being administered by Caltrans. Construction will begin approximately October 2016 with an estimated completion date of March 2017.

Flooding Mitigation – Project 5

Goal: Construction of stormwater improvement projects limit the number of flooding incidents and helps to protect private property, public facilities and lives which contributes to quality of life.

Objective: Install storm drain pipe outlet from the Lime Basin.

Title: **Lime Avenue Basin**

Description: Install a storm drain pipe outlet from the Lime Basin to north of Monica Court in order to mitigate flooding incidents to improve the quality of life in the area.

Action(s): Project design began June 2017. Construction is estimated to begin March 2018 with an estimated completion date of July 2018.

Flooding Mitigation – Project 6

Goal: *Construction of stormwater improvement projects limit the number of flooding incidents and helps to protect private property, public facilities and lives which contributes to quality of life.*

Objective: *Install storm drain pipe to close missing gap between existing storm drain basin and constructed storm drain systems.*

Title: **Sultana at Miller Basin**

Description: Install storm drain pipe to close missing gap between existing storm drain basin and constructed storm drain systems within Sultana Avenue and Miller Avenue. Tie existing basin into the storm drain system.

Action(s): Project design is expected to start June 2017. Construction is estimated to begin March 2018 with an estimated completion date of July 2018.

Flooding Mitigation – Project 7

Goal: Maintain up to date information regarding flood zones and flood hazard areas that assist in mitigating development in potential flood hazard zones.

Objective: Install storm drain pipe to close missing gap between existing storm drain basin and constructed storm drain systems.

Title: **National Flood Insurance Program (NFIP) Maps**

Description: As required by the State of California, National Flood Insurance Program (NFIP) maps published by FEMA must be included in the HMP or General Plan Safety Element. Keeping this information current is an important mitigation action.

Action(s): Update NFIP data and maps with newly identified flood hazard areas in the County, as new information becomes available.

Earthquake Mitigation – Combined Incentives

Goal: Reduce seismic injury and loss of life, property and other impacts caused by seismic shaking, fault rupture, ground failure, and earthquake induced landslides.

Objective: Provide a safe community for residents, business owners and stakeholders in the City of Fontana.

Title: **Earthquake Preparedness**

Description: Promote safe development and redevelopment, retrofitting of essential structures and facilities to protect life and property.

Action(s):

1. The City shall continue to ensure that current geologic knowledge and peer (third party) review are incorporated into the design, planning and construction states of a project.
2. The City shall continue to ensure to the fullest extent possible that, in the event of a major disaster, essential structures, and facilities remain safe and functional as required by current

law. Essential facilities include hospitals, police stations, fire stations, and emergency operation centers and communication centers.

3. The City shall continue to participate in regional programs designed to protect groundwater resources and to protect the area from the hazard of regional ground subsidence through careful management of the regional groundwater basin that underlies the area.

Drought Mitigation – Project 1

Goal: Reduce the amount of water used by the public.

Objective: Raise public awareness regarding drought and water shortage.

Title: **Public Awareness Drought Mitigation**

Description: Public education and outreach programs are an efficient and cost-effective way to promote meaningful changes within a community. A program to raise awareness on the importance of water conservation could significantly reduce the amount of water used by the public.

Action(s): Create a public awareness campaign advising the community and business owners on water conservation.

Drought Mitigation – Project 2

Goal: Reduce the amount of water used by the public and private sector.

Objective: Reduce usage and waste of water supply.

Title: **Water Restriction Schedules**

Description: In response to the State Water Resources Control Beard's 2016 emergency water conservation regulation, the City of Fontana enforces a watering schedule for residential and commercial addresses.

Action(s): Continue to enforce the watering schedule and watering restrictions implemented throughout the City.

Drought Mitigation – Project 3

Goal: Implementation of comprehensive regulations related to water efficiency landscaping.

Objective: Promote the conservation and efficient use of water to prevent the waste of this valuable resource.

Title: **Model Water Efficient Landscape Ordinance (MWELO)**

Description: The City of Fontana has adopted and an ordinance that promotes the conservation and efficient use of water.

Action(s): Review all projects through entitlement process to ensure that they meet the MWELO standards for drought tolerant and water efficiency without waste of this valuable resource.

Drought Mitigation – Project 4

Goal: Promote Innovative and resource-efficient systems and reduce sewer fees and waste.

Objective: Advocate for more recycled water systems to serve all large users in Fontana.

Title: **Collaboration with the Inland Empire Utilites Agnecy (IEUA) as a partnership for water efficiency.**

Description: Support incorporation of greywater systems in new developments.

Action(s): Encourage "water-wise" development, by considering incentives such as streamlined permitting for new residential developments that install greywater systems and continue partnership with IEUA to reduce sewer fees to residences that install grey-water plumbing..

Anti-Terrorisism Mitigation – Project 1

Goal: Continue Regional aide and training to improve police response and training to frontline law enforcement services in the event of a terrorist threat or attack.

Objective: Continually evaluate and improve emergency response services as related to regional global terrorism.

Title: **Alternative Funding Resources for Anti-Terrorism Training**

Description: To maintain a City-wide fund to ensure the City remains in a "ready state" to respond efficiently to emergencies, disasters, and homeland security issues.

Action(s): To seek alternative funding for emergency services and homeland security and to continue regional involvement in emergency preparedness. To continue to determine training plans and needs for the City on an annual basis.

Climate Change Mitigation – Project 1

Goal: Reduce effects of Greenhouse Gas Emissions (GHG) on the environment.

Objective: Create a Sustainable Fontana program that promotes green practices in government and in the community.

Title: **Sustainable Fontana Program**

Description: Establish a "Sustainable Fontana" program to coordinate City government resource-efficiency efforts and promote private initiatives and opportunities to comply with

Action(s): Identify grant opportunities for sustainability and resilience activities, including public awareness programs.

Climate Change Mitigation – Project 2

Goal: Establish Renewable Energy Sources.

Objective: Support measures that permit small-scale wind and solar installations.

Title: **Sustainable Fontana Program**

Description: Renewable sources of energy, including solar and wind, and other energy-conservation strategies are available to city households and businesses.

Action(s): Create incentive programs that encourage renewable energy options for residences and small businesses in the community through the development and permit process.

Climate Change Mitigation – Project 3

Goal: Maximize energy and resource efficiency and reduction of waste.

Objective: City government facilities and operations are models of resource-efficiency.

Title: **Sustainable Fontana Program**

Description: Incorporate goals into the City of Fontana Municipal Code for resource efficiency in municipal facilities and operations.

Action(s): Require that all capital projects be evaluated for resource-efficiency, sustainability and resilience values and give preference to energy efficient design, material and equipment in public facilities and infrastructure.

6.3.1 Considering Mitigation Alternatives

The Local Task Force committee for the LHMP participated in the development and review of mitigation actions with a wide range of alternatives. To narrow mitigation alternatives for inclusion, FEMA's six broad categories of mitigation alternatives were used. Each FEMA category is described below. The LHMP Advisory Task Force developed several mitigation alternatives for implementation under each mitigation category.

PREVENTION (PRV):

Preventative activities are intended to keep hazard problems from getting worse, and are typically administered through government programs or regulatory actions that influence the way land is developed and buildings are built. They are particularly effective in reducing a community's future vulnerability, especially in areas where development has not occurred or capital improvements have not been substantial. Examples of preventative activities include:

- Planning and zoning ordinances;
- Building codes;
- Open space preservation;
- Floodplain regulations;
- Stormwater management regulations;
- Drainage system maintenance;
- Capital improvements programming; and
- Riverine / fault zone setbacks.

PRV ALTERNATIVES:

1) Evaluate the City's regulations that manage flood risk / stormwater conveyance and consider additional standards to help prevent flood problems from increasing. These include:
    - Practicing Water Sensitive Urban Design such as the incorporation of curb cuts into bioswales to control runoff.
    - Enhanced stormwater regulations to reduce stormwater runoff, especially for new development
2) Consider additional policies and regulations to enhance the preservation of Open Space in flood prone and wild land fire high risk areas.
3) Training for City Staff:
    - Provide Certified Floodplain Manager training and certification to staff
4) Vegetation management in fire prone areas.

PROPERTY PROTECTION (PPRO):

Property protection measures involve the modification of existing buildings and structures to help them better withstand the forces of a hazard, or removal of the structures from hazardous locations. Examples include:

- Critical facilities protection;
- Retrofitting (e.g., seismic design techniques, etc.);
- Insurance.

PPRO ALTERNATIVES:

1) Consider promoting and supporting voluntary property protection measures through several activities, ranging from financial incentives to full funding. Examples include Earthquake Brace + Bolt, The California Residential Mitigation Program and California Air Resources Board Air Pollution Incentives, Grants and Credit Programs.
2) Promote earthquake insurance for properties with a focus on older structures built before 1980.
3) Evaluate public owned facilities and critical facilities for property protection measures.
4) Perform seismic review (both structural and non-structural) on city buildings and city owned critical facilities.
5) Provide automatic shutoff valves for utility infrastructure.
6) Review city owned buildings for seismic risk.
7) Identify and mitigate privately owned unreinforced masonry buildings within the City.

PUBLIC EDUCATION AND AWARENESS (PE&A):

Public education and awareness activities are used to advise residents, elected officials, business owners, potential property buyers, and visitors about hazards, hazardous areas, and mitigation techniques they can use to protect themselves and their property. Examples of measures to educate and inform the public include:

- Outreach projects including neighborhood and community outreach;
- Speaker series / demonstration events;
- Hazard mapping;
- Real estate disclosures;
- Materials Library;
- School children educational programs; and
- Hazard expositions.

PE&A ALTERNATIVES:

1) Enhancing the City's Public Information Program to include both the public and private sectors.
2) Education and outreach measures to ensure the community understands **their** role in protecting **themselves** in a disaster event.
    - Mitigation measures for residents at the home (i.e. stabilizing through vegetation)
    - Safety precautions for all types of hazards, but especially earthquakes, wildfires, and drought.
    - Knowing where emergency evacuation routes and shelters are located.
    - Family and emergency preparedness measures.
3) Enhance public outreach program to include all hazards. Appropriate ways to spread information are:
    - Websites and social media
    - Mailings to everyone, in utility bills or otherwise
    - News releases or newspaper articles
    - Newsletters
    - Displays, particularly at special events

- Handouts, flyers and other materials, which can be distributed at special events and presentations

NATURAL RESOURCE PROTECTION (NRP):

Natural resource protection activities reduce the impact of natural hazards by preserving or restoring natural areas and their protective functions. Such areas include floodplains, wetlands, steep slopes, and sand dunes. Parks, recreation, or conservation agencies and organizations often implement these protective measures. Examples include:

- Floodplain protection
- Watershed management;
- Vegetation management (e.g., fire resistant landscaping, fuel breaks, etc.);
- Erosion and sediment control;
- Wetland and habitat preservation and restoration;

NRP ALTERNATIVES:

1) Inform City Council about the hazard mitigation benefits of restoring natural drainage features, wetlands and other natural areas.
2) Develop restoration and protection techniques using water sensitive urban design, landslide areas and high risk wild land fire areas.
3) Enhance public education and outreach efforts to inform the public about the need to protect hillsides from erosion. (i.e. stabilizing through vegetation) (City needs to make sure the resources are needed to do this after a fire) Enhance public education and outreach efforts to inform the public about capturing stormwater and using it for landscape features.
4) Work with property owners to replant native vegetation after a fire.
5) Land use and/or other regulatory control of undeveloped properties in flood zones.

EMERGENCY SERVICES (ES):

Although not typically considered a “mitigation” technique, emergency service measures do minimize the impact of a hazard event on people and property. These commonly are actions taken immediately prior to, during, or in response to a hazard event. Examples include:

- Warning systems;
- Construction of evacuation routes;
- Sandbag staging for flood protection; and
- Installing temporary shutters on buildings for wind protection.

ES ALTERNATIVES:

1) Consider StormReady certification.
2) Provide alert and notification to residents for flood risk
3) Training for City Staff

STRUCTURAL PROJECTS (SP):

Structural mitigation projects are intended to lessen the impact of a hazard by modifying the environmental natural progression of the hazard event through construction. They are usually designed by engineers and managed or maintained by public works staff. Examples include:

- Stormwater diversions / detention / retention infrastructure;
- Utility Upgrades
- Seismic Retrofits

SP ALTERNATIVES:

1) The City has previously constructed flood control and drainage facilities that move storm and flood waters more efficiently and reduced potential for overbank flooding. The City should identify and prioritize additional projects in the City.
2) Protecting utilities from EQ damage. Not the City's responsibility but private utility industry.
3) Constructing backup utility infrastructure in the event of a natural disaster.
4) Check the condition of the City's utility infrastructure.
5) Upgrade or seismically retrofit transportation infrastructure including overpasses, underpasses, and other transportation infrastructure vulnerable to seismic events.
6) Identify or construct alternative routes for emergency access to the City. Provide shoring and bank stabilization near roadways to prevent further erosion.
7) Work with private property owners to reduce runoff.
8) Provide City infrastructure to slow the movement of water.

6.4 Mitigation Priorities

6.4.1 Prioritization Process

Based upon Task Force priorities, risk assessment results, and mitigation alternatives, mitigation actions were developed. Most importantly, the newly developed mitigation actions acknowledge updated risk assessment information outlined in Section 4. Mitigation actions presented in Table 5 10 establish 19 possible mitigation actions. Some mitigation actions support ongoing City activities, while other actions are intended to be completed when funding is available. Regardless, mitigation actions will be part of an annual review.

All rankings were determined by the consensus of the Local Advisory Task Force.

EARTHQUAKE

Action No.	Specific Mitigation Action	Mitigation Type	Priority Rating	Comments
EQ 1.1	Evaluate all proposed developments for impacts associated with geologic and seismic hazards.	PRV	4	Developer cost / impact fee.
EQ 1.2	Perform a seismic review (both structural and non-structural) on city buildings and city owned critical facilities i.e. City Hall, Public Works building and Fire Station.	PRV, PPRO	2	
EQ 1.3	Mitigate unreinforced masonry buildings in the City, starting with gathering facilities.	PPRO	5	
EQ 1.4	Work with local insurance brokers to encourage earthquake insurance for homeowners.	PE&A, PPRO	N/A	

EQ 1.5	Provide automatic shutoff valves for gas meters in the Fontana service area.	PPRO	3	

LANDSLIDE

Action No.	Specific Mitigation Action	Mitigation Type	Priority Rating	Comments
LS 1.1	Encourage homeowners in high landslide hazard areas to plant native trees and shrubbery.	PE&A, PRV	5	
LS 1.2	Develop public education and awareness material regarding vegetation and erosion control and provide resources for erosion control and slope failure on private properties.	PE&A, NRP	3	

WILDFIRE

Action No.	Specific Mitigation Action	Mitigation Type	Priority Rating	Comments
WF 1.1	Improve public education programs for residents to reduce wildfire risk.	PE&A, PRV	4	
WF 1.2	Maintain and improve access to fire prone areas such as Coyote Canyon and Jurupa Hills	SP, PRV	2	
WF 1.3	Continue the weed abatement program and fuel management and fuel reduction in open space, creeks, around critical facilities, and urban / wildland interface areas.	PRV, NRP	1	
WF 1.4	Repair/ replant vegetation on slopes after a fire to minimize the risk of landslides, mudslides or slope failure.	NRP, PRV	3	

FLOOD

Action No.	Specific Mitigation Action	Mitigation Type	Priority Rating	Comments
FL 1.1	Perform a feasibility study for retention and detention of storm water to include water sensitive urban design.	PRV	2	
FL 1.2	Evaluate public infrastructure (bridges, traffic signals, street lights, etc.) and its ability to withstand localized flood events.	PRV	5	
FL 1.3	Ensure undeveloped properties adhere to General Plan Land Use designations and flood plain preservation and risk reduction methodologies.	PRV	3	
FL 1.4	Continue to impose BMPs on all users of the storm drain system, including users from existing residential or commercial development. All users of the storm drain system—including, but not limited to, users from existing residential or commercial development—must comply with all BMP's imposed on the user by the environmental manager.	PE&A, PRV	4	
FL 1.5	Most residential streets within the City of Fontana are swept every other week and typically follow trash service day. Industrial sweeping and commercial sweeping occur weekly.	PE&A, PRV	4	

CLIMATE CHANGE

Action No.	Specific Mitigation Action	Mitigation Type	Priority Rating	Comments
CC 1.1	Continue to construct parks and open space for every 1,000 residents, reducing the impacts of high heat on urbanized areas.	PRV, NRP	3	

CC 1.2	Plant street trees to provide shade on high heat days and reduce the urban heat island effect.	PRV	1	
CC 1.3	Continue working with Southern California Edison to promote energy conservation at residences and businesses.	PE&A, PRV, NRP	2	This may include implementing an Air Conditioning Replacement Program or encouraging a reduction in energy consumption on high heat days. Continue to provide cooling shelters for residents
CC 1.4	Continue working with San Gabriel Valley Water Department (Fontana Water Department) to offer continual educational and informative water wise values.	PE&A PRV, NRP	2	This may include a continued partnership with the local water department to offer Water Wise alternatives.

6.5 Mitigation Strategy

An implementation strategy is the key to any successful planning effort. The implementation strategy identifies who has lead responsibility for the project, potential funding sources(s) to support implementation, the estimated timeframe for completion, and the priority ranking defined as follows:

- Responsible Agency: City Department and/or other agency assigned lead responsibility
- Funding source(s): Potential internal and external funding source(s)
- Timeframe: Short-term (less than 2 years); long-term (more than 2 years)
- Priority Ranking: High, Medium or Low (as defined in Section 6.4)

Section 7. Plan Maintenance

7.1 Monitoring, Evaluating and Updating the LHMP

As a living document it is important that this plan becomes a tool in the City of Fontana's resources to ensure reductions in possible damage from a natural hazard event. This section discusses plan adoption, implementation, monitoring, evaluating, and updating the LHMP. Plan implementation and maintenance procedures will ensure that the LHMP remains relevant and continues to address the changing environment in the City of Fontana. This section describes the incorporation of the LHMP into existing City of Fontana planning mechanisms, and how the City of Fontana staff will continue to engage the public.

The inclusion of the Hazard Mitigation Plan into other existing City plans will continue to be a collaborative process that involves multiple stakeholders from associated agencies and departments. Because the Hazard Mitigation Plan is a living document that reflects ongoing hazard mitigation activities, the process of monitoring, evaluating, and updating will be critical to the effectiveness of hazard mitigation within the City. To facilitate the hazard mitigation planning process, the Hazard Mitigation Plan will be reviewed annually and revisions will be provided to FEMA in a five-year cycle, as required.

The City of Fontana will review the plan at least annually and update project status and other plan elements as necessary. Departments with projects will track the status of their projects through the entire life cycle from concept to completion. Each year proposed projects are reviewed during budget development and selected projects are submitted for funding to the appropriate funding source.

7.1.1 Plan Adoption

To comply with DMA 2000, the City Council has officially adopted the 2017 City of Fontana LHMP. The adoption of the 2017 LHMP recognizes the City of Fontana's commitment to reducing the impacts of natural hazards within the City of Fontana limits. A copy of the 2017 LHMP adoption resolution is included in Section XX

7.1.2 Implementation

Over time, Implementation Strategies will become more detailed and the City of Fontana's mitigation planners will work to provide more detail for priority mitigation actions. In conjunction with the progress report processes outlined in the implementation strategy worksheets and will be extremely useful as a plan of record tool for updates. Each implementation strategy worksheet provides individual steps and resources needed to complete each mitigation action. The following provides several options to consider when developing implementation strategies in the future:

- **Use processes that already exist;** initial strategy is to take advantage of tools and procedures identified in the capability assessment in Section 5. By using planning mechanisms already in use and familiar to City of Fontana departments and organizations, it will give the planning implementation phase a strong initial boost, especially if a mitigation strategy calls for expanding existing programs, or creating new programs or processes at a later date.

- **Updated work plans, policies, or procedures**; hazard mitigation concepts and activities can help integrate the 2017 LHMP into daily operations. These changes can include how major development projects and subdivision reviews are addressed in hazard prone areas or ensure that hazard mitigation concerns are considered in the approval of major capital improvement projects.
- Job descriptions; working with department or agency heads to revise job descriptions of government staff to include mitigation-related duties could further institutionalize hazard mitigation. This change would not necessarily result in great financial expenditures or programmatic changes.

The 2017 Hazard Mitigation Plan update process was followed by inclusion of mitigation measures in the Safety Element of the City of Fontana General Plan. The City of Fontana addresses statewide planning goals and legislative requirements through its General Plan, Capital Improvement Projects, and City Building and Safety Codes. The Hazard Mitigation Plan will implement a series of recommendations, many of which are closely related to the goals and objectives of existing planning programs. The City of Fontana will have the opportunity to implement recommended mitigation action items through existing programs and procedures.

The Hazard Mitigation Plan goals and actions will be incorporated into various general operations of government. For example, the Local Hazard Mitigation Plan was recently adopted into the Safety Element of the General Plan and much of the information from the Hazard Mitigation Plan will be included in the City of Fontana Emergency Operations Plan (EOP). As any future City plans are developed, the Hazard Mitigation Plan will be a great asset in any plan development efforts. As noted earlier, much of the information contained in this Hazard Mitigation Plan is from the City's General Plan and is already part of the planning process

7.1.3 Future Participation

The City of Fontana LHMP Task Force, established for this update, will become a permanent advisory body to administer and coordinate the implementation and maintenance of the 2017 LHMP. The Department will lead the 2017 LHMP plan development and updates and all associated LHMP maintenance requirements. On an annual basis, the LHMP Task Force will report to the City Council and the public on the status of plan implementation and mitigation opportunities in the City of Fontana. Other duties include reviewing and promoting mitigation opportunities, informing and soliciting input from the public and developing grant applications for hazard mitigation assistance.

7.1.4 Schedule

Monitoring the progress of the mitigation actions will be on-going throughout the five-year period between the adoption of the 2017 LHMP and the next update effort. The LHMP Local Advisory Task Force will meet on an annual basis to monitor the status of the implementation of mitigation actions and develop updates as necessary.

The LHMP Local Advisory Task Force should prepare a yearly status report to the City Council during the five years between updates.

The LHMP will be updated every five years, as required by DMA 2000. The update process will begin at least one year prior to the expiration of the 2017 LHMP. However, should a significant disaster occur within

the City, the LHMP Local Advisory Task Force will reconvene within 30 days of the disaster to review and update the LHMP as appropriate, and the City Council will adopt written updates to the LHMP as a DMA 2000 requirement.

7.1.5 Process

The LHMP Local Advisory Task Force will coordinate with responsible agencies/organizations identified for each mitigation action. These responsible agencies/organizations will monitor and evaluate the progress made on the implementation of mitigation actions and report to the LHMP Task Force on an annual basis. Working with the LHMP Task Force, these responsible agencies/organizations will be asked to assess the effectiveness of the mitigation actions and modify the mitigation actions as appropriate. A LHMP Mitigation Action Progress Report worksheet was developed as part of this LHMP to assist mitigation project managers in reporting on the status and assessing the effectiveness of the mitigation actions.

Information culled from the mitigation leads or "champions" will be used to monitor mitigation actions and annual evaluation of the LHMP. The following questions will be considered as criteria for evaluating the effectiveness of the LHMP:

- Has the nature or magnitude of hazards affecting the City changed?
- Are there new hazards that have the potential to impact the City?
- Do the identified goals and actions address current and expected conditions?
- Have mitigation actions been implemented or completed?
- Has the implementation of identified mitigation actions resulted in expected outcomes?
- Are current resources adequate to implement the LHMP?
- Should additional local resources be committed to address identified hazards?

An Annual LHMP Review Questionnaire worksheet has been developed as part of this LHMP to provide guidance to the LHMP Task Force on what should be included in the evaluation. Future updates to the LHMP will account for any new hazard vulnerabilities, special circumstances, or new information that becomes available. Issues that arise during monitoring and evaluating the LHMP, which require changes to the risk assessment, mitigation strategy and other components of the LHMP, will be incorporated into the next update of the 2017 LHMP in 2022. The questions identified above would remain valid during the preparation of the 2022 update.

7.2 Incorporation into Existing Planning Mechanisms

An important implementation mechanism is to incorporate the recommendations and underlying principles of the LHMP into community planning and development such as capital improvement budgeting, building and zoning codes, general plans and regional plans. Mitigation is most successful when it is incorporated within the day-to-day functions and priorities of the jurisdiction attempting to implement risk reducing actions. The integration of a variety of City departments on the LHMP Local Advisory Task Force provides an opportunity for constant and pervasive efforts to network, identify, and highlight mitigation activities and

opportunities at all levels of government. This collaborative effort is also important to monitor funding opportunities which can be leveraged to implement the mitigation actions. Information from this 2017 LHMP can be incorporated into:

- **City of Fontana General Plan:** The 2017 LHMP will provide information that can be incorporated into the Land Use, Public Health and Safety, and Sustainable Development Elements during the next general plan update. Specific risk and vulnerability information from the City of Fontana's LHMP will assist to identify areas where development may be at risk to potential hazards.
- **City Building / Development Codes and Zoning Ordinances:** The 2017 LHMP will provide information to enable the City to make decisions on appropriate building/development codes and ordinances. Appropriate building codes and ordinances can increase the City's resilience against natural disasters.
- **San Bernardino Valley Regional Urban Water Management Plan (UWMP):** The 2017 LHMP highlights areas of concern regarding climate change and the added pressure it will place on the City's water supply. Suitable mitigation actions from the LHMP can be included in the UWMP.

7.3 Continued Public Involvement

A critical part of maintaining an effective and relevant Hazard Mitigation Plan is ongoing public review and comment. Consequently, the City is dedicated to the direct involvement of its citizens in providing feedback and comments on the plan on a continued basis.

The public will continue to be apprised of Local Hazard Mitigation Plan actions through the City's website and through the local media. All proposed changes to the plan will be subject to citizen review prior to City Council action. The City will follow its standard public input process, consistent with the process used in the initial plan development, which is described in Section 3 of this Plan.

During the five-year update cycle (2017-2022), City staff will involve the public using public workshops and meetings. Information on upcoming public events related to the LHMP or solicitation for comments will be announced via newspapers, mailings, and on the City website (http://www.fontana.org/local-hazard-mitigation-plan.html). An electronic copy of the current LHMP document will be accessible through the City website, with hard copies available for review at the City of Fontana Community Development Department. The LHMP Local Task Force Advisory Committee will, as much as practicable, incorporate the following concepts into its public outreach strategy to ensure continued public involvement in the LHMP planning process:

- Collaborate with San Bernardino County on hazard mitigation efforts;
- Work with public service clubs;
- Collaborate with faith based organizations;
- Distribute emails and postcards/mailers to City residents about hazard mitigation updates;

- Post meeting announcements at coffee houses, grocery stores, libraries, etc;
- Participate in other existing local community meetings;
- Distribute information through K-12 schools
- Continue to use the City website as a distribution point of hazard mitigation information

APPENDIX A – City Resolution

RESOLUTION NO. 2018 -

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF FONTANA ADOPTING THE CITY OF FONTANA HAZARD MITIGATION PLAS AS REQUIRED BY THE FEDERAL DISASTER MITIGATION AND COST REDUCTION ACT OF 2000.

WHEREAS, a request to recommend approval to the City Council for the proposed State Mandated Local Hazard Mitigation Plan (LHMP); and

WHEREAS, President William J. Clinton signed H.R. 707, the Disaster Mitigation and Cost Reduction Act of 2000, into law on October 30, 2000; and

WHEREAS, the Disaster Mitigation Act of 2000 requires all jurisdictions to be covered by a Local Hazard Mitigation Plan to be eligible for Federal Emergency Management Agency post-disaster funds; and

WHEREAS, The City of Fontana –"Hazard Mitigation Lead Agency Department" has acted as the lead agency in the development of the City of Fontana Hazard Mitigation Plan; and

WHEREAS, the City of Fontana "Hazard Mitigation Lead Agency Department" has coordinated the development of the Hazard Mitigation Plan; and

WHEREAS, the "Hazard Mitigation Lead Agency Department" has the authority within the City of Fontana; and

WHEREAS, the City of Fontana is concerned about mitigating potential losses from natural disasters before they occur; and

WHEREAS, the plan identifies potential hazards, potential losses and potential mitigation measures to limit losses; and

WHEREAS, the California State Governor's Office of Emergency Services has reviewed the plan on behalf of the Federal Emergency Management Agency; and

WHEREAS, formal adoption of the plan by the City of Fontana's City Council is required before final approval of the plan can be obtained from the Federal Emergency Management Agency; and

WHEREAS, The City of Fontana has determined that it would be in the best interest of the City as whole to adopt the Hazard Mitigation Plan.

WHEREAS, this resolution shall become effective on the date of adoption.

NOW, THEREFORE, BE IT RESOLVED, determined and ordered by the City Council of the City of Fontana as follows:

Section I. The City Council adopts the City of Fontana Hazard Mitigation Plan, dated to meet the requirements of the Disaster Mitigation and Cost Reduction Act of 2000 and directs the City of Fontana to forward the Hazard Mitigation Plan to the Governor's Office of Emergency Services and Federal Emergency Management Agency on behalf of the City of Fontana for final approval.

Section 2. A certified copy of the City of Fontana Hazard Mitigation Plan shall be placed on file with the City Clerk's office and is available for viewing by the public.

APPROVED AND ADOPTED this

READ AND APPROVED AS TO LEGAL FORM:

_____
City Attorney

I, Tonia Lewis, City Clerk of the City of Fontana and Ex-Officio Clerk of the City Council, do hereby certify that the foregoing resolution is the actual resolution duly and regularly adopted by the City of Fontana at a regular meeting thereof, held on the day of by the following vote to wit:

AYES:
NOES:
ABSENT:
ABSTAIN:

_____
City Clerk of the City of Fontana

_____
Mayor of the City of Fontana

ATTEST:

_____
City Clerk

CERT

Community Emergency Response Team

CERT Class #39

Course is 20 Hrs./3 Day

October 14, 15, 22

* After a big disaster, emergency assistance might not be available right away.

* Learn how to take care of yourself, your family and neighborhood after a disaster

.

* CERT class times are Friday: 6 pm - 10 pm and Saturdays 8 am to 5 pm

* Training to be held at Cypress Community Center, 8380 Cypress Ave., Fontana

* Receive a certificate upon completion of ALL three classes.

Modules:

1. Emergency Preparedness
2. Emergency Medical Operations - Part 1
3. Emergency Medical Operations - Part 2
4. Fire Safety
5. Light Search and Rescue Operations
6. CERT Organization & Disaster Psychology
7. Terrorism
8. Course Review and Disaster Simulation

If you are interested in becoming a **CERT** member or would like to sign up for the Training Course, please log onto the Fontana Police Department web site and click on volunteer. Follow the links and download the application & liability waiver . Fax, Scan, or snail mail it to Ray Cancel - Crime Prevention
Fontana Police Department

Community Emergency Response Team Training
Fontana Police CERT Program Course Syllabus

CERT Class Instructor/Coordinator: Ray Cancel (909) 854-8016

Ray Cancel: ramoncanc@aol.com or rcancel@fontana.org



Disaster Preparedness / CERT Organization

- Personal and Family Prepartion
- Disasters and Disaster Workers
- Impact on Infrastructure
- Hazard Mitigation
- Incident Command System (ICS)
- Developing a Response Team / CERT Organization

Friday: 6:00 - 10:00 pm



Disaster Fire Suppression

Light Search & Rescue

- CERT Size – Up
- Fire Chemistry
- Hazardous materials / Placarding
- Portable Fire Extinguisher Use
- Live Fire Exercise
- Evacuation / Search Techniques / Rescue Methods

Saturday: 8 am - 5:00 pm APRIL 2, 2016



Disaster Medical Operations I & II

- Recognizing & Treating Life Threatening Emergencies
- Triage / Establishing Treatment Areas
- Head-to-Toe Assessment
- Treating Non-Life Threatening Emergencies
- Recognizing & Treating Life Threatening Emergencies



SAR (Cribbing)

- Evacuation / Search Techniques / Rescue Methods
- Cribbing and Leveraging Exercises

Disaster Psychology

- Psychological Size-Up
- Relating to Disaster Victim
- How to Provide Psychological
- Caring for Yourself, Your Buddy and Victims
- CERT Team Well Being
- Working with Survivors



Saturday: 8am - 5:00 pm April 9, 2016

Disaster Terrorism

- History of Terrorism
- Defining Terrorism
- Identifying Potential Targets
- Do's and Don'ts During a Terrorist Act
- Homeland Defense Tips
- Working with Survivors' Trauma

Disaster Review/Disaster Simulation/Graduation

- Course Review / Issue CERT Gear
- Disaster Simulation Drill
- Exercise Critique & Summary
- Graduation / Certificates

Fontana Police Department
CERT Program
Class 36
Cypress Community Center
8380 Cypress Avenue
Fontana, Ca 92335

Fontana CAP

14th Annual Resource Fair

——Jack Bulik Park——

Multi-Purpose Rink

16581 Filbert St. Fontana, CA 92335

Friday, April 21st, 2017



Join us and meet representatives from agencies around the City of Fontana and throughout the San Bernardino County who provide zero to low cost programs and services to individuals and families.

Brought to you By:

FONTANA CALIFORNIA

FONTANA POLICE

Assistance Community Program "Helping to put the pieces together" City of Fontana • Water of Life Community Church

Water of Life community church

MOLINA HEALTHCARE

LINKING OUR CITY WITH OUR CHURCH CITYLINK WATER OF LIFE

For more information visit our website : www.fontanacap.org

FONTANA POLICE DEPARTMENT CITIZEN ACADEMY 2017

February 23, 2017 - April 27, 2017
Thursday Nights

Time: 6:30 pm - 8:30 pm
Where: Fontana Police Dept.

Community Involvement:
Key to Success

The academy is designed to give Citizens an overview of the Police Department's policies and procedures. Classes are taught by Police staff.

Participate with your local Police Department and examine the difficulties and challenges they face daily. We are offering a FREE ten (10) week Academy. Class size is limited so register early. See reverse side for registration. All registrants subject to a backgrounds check and must be 18 years of age or older.. Approval is at the discretion of the Fontana Police Department. Participant application is available on-line.







TOPICS

- Air Support Unit
- Area Commanders
- Crime Analyst
- Crime Scene Investigation
- Defensive Tactics
- Disaster Readiness
- Dispatch
- Gangs/Narcotics
- Internal Affairs
- Investigations
- K-9 Unit & Facility Tour
- Legal System
- Patrol Procedures
- SWAT
- Special Operations
- Traffic Enforcement
- Volunteering
- West Valley Detention Center Tour

For additional information contact Olga A. Hernandez at (909) 350-7758 or e-mail at oahernandez@fontana.org.

2016 NATIONAL NIGHT OUT

POLICE · COMMUNITY PARTNERSHIPS

Celebración Nacional Contra el Crimen

Martes, 2 de agosto, 2016

Acompáñanos el martes, 2 de agosto en el Parque de Fontana para promover la prevención del crimen y del uso de drogas y para fortalecer las alianzas entre la policía y la comunidad.

Habrá comida gratis, rifas, demostraciones de equipo, actividades para los niños y todos los recursos comunitarios para generar apoyo y participación en los esfuerzos para prevenir el crimen.

Además tendremos visitas del famoso McGruff- el pero contra el crimen

y Eddie el Aguila de seguridad del arma.

Ayuda a sus vecinos en el esfuerzo de prevenir crimen en su comunidad y mantener a nuestra juventud afuera de peligro. Los esperamos en la próxima Celebración Nacional Contra el Crimen.

Cuando: Martes, 2 de agosto, 2016 de 6:00 p.m. – 8:00 p.m.

Donde: Martin Tudor Jurupa Hills Parque Regional
11660 Sierra Avenue, Fontana 92337

Para más información comunicase con Olga Hernandez con el Departamento de Policía de Fontana 909-350-7758.

2016 NATIONAL NIGHT OUT

POLICE · COMMUNITY PARTNERSHIPS

***FREE HOT DOGS * FREE RESOURCES & INFO ***

*** GIVEAWAYS * FIRE AND POLICE DISPLAYS ***

Appearances by McGruff the Crime Dog

& Eddie the Gun Safety Eagle

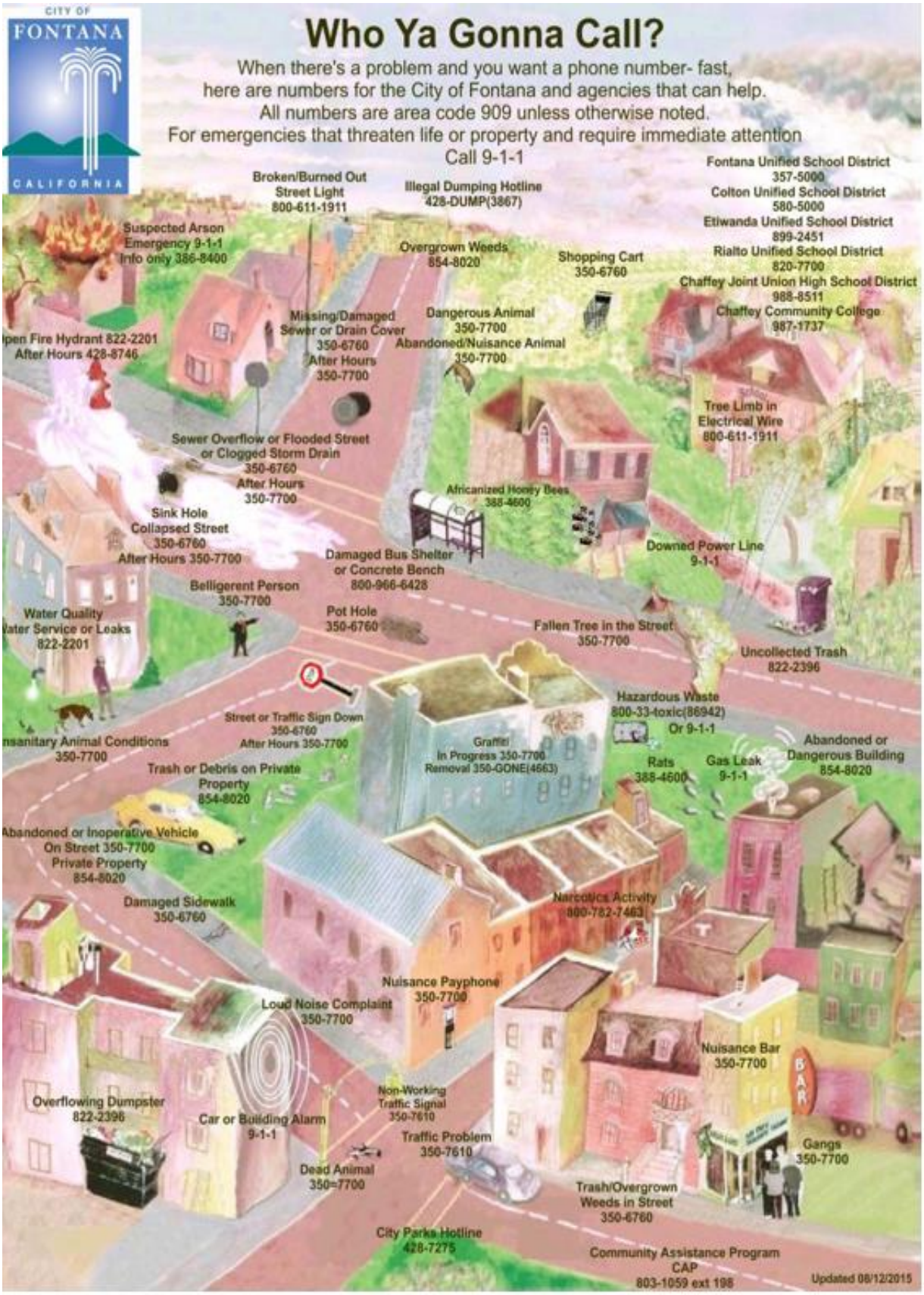
Residents throughout the City of Fontana are invited to join the Fontana Police Department and City Officials for the 33rd Annual "National Night Out" on **Tuesday, August 2nd**. National Night Out promotes community support and crime prevention awareness by throwing a "Going Away Party for Crime and Drugs."

Please join us in supporting crime prevention efforts in YOUR community!

When: Tuesday, August 2, 2016 - 6:00pm to 8:00pm

Where: Martin Tudor Jurupa Hills Regional Park
11660 Sierra Ave., Fontana, 92337

FOR MORE INFO CONTACT: Olga Hernandez Fontana Police Dept. **909-350-7758**


CITY OF FONTANA CALIFORNIA
Who Ya Gonna Call?
When there's a problem and you want a phone number- fast,
here are numbers for the City of Fontana and agencies that can help.
All numbers are area code 909 unless otherwise noted.
For emergencies that threaten life or property and require immediate attention
Call 9-1-1
Broken/Burned Out Street Light 800-611-1911
Illegal Dumping Hotline 428-DUMP(3867)
Fontana Unified School District 357-5000
Colton Unified School District 580-5000
Etiwanda Unified School District 899-2451
Rialto Unified School District 820-7700
Chaffey Joint Union High School District 988-8511
Chaffey Community College 987-1737
Suspected Arson Emergency 9-1-1 Info only 386-8400
Overgrown Weeds 854-8020
Shopping Cart 350-6760
Missing/Damaged Sewer or Drain Cover 350-6760 After Hours 350-7700
Dangerous Animal 350-7700
Abandoned/Nuisance Animal 350-7700
Open Fire Hydrant 822-2201 After Hours 428-8746
Tree Limb in Electrical Wire 800-611-1911
Sewer Overflow or Flooded Street or Clogged Storm Drain 350-6760 After Hours 350-7700
Africanized Honey Bees 388-4600
Sink Hole Collapsed Street 350-6760 After Hours 350-7700
Damaged Bus Shelter or Concrete Bench 800-966-6428
Downed Power Line 9-1-1
Belligerent Person 350-7700
Water Quality Water Service or Leaks 822-2201
Pot Hole 350-6760
Fallen Tree in the Street 350-7700
Uncollected Trash 822-2396
Hazardous Waste 800-33-toxic(86942) Or 9-1-1
Street or Traffic Sign Down 350-6760 After Hours 350-7700
Insanitary Animal Conditions 350-7700
Graffiti In Progress 350-7700 Removal 350-GONE(4663)
Rats 388-4600
Gas Leak 9-1-1
Abandoned or Dangerous Building 854-8020
Trash or Debris on Private Property 854-8020
Abandoned or Inoperative Vehicle On Street 350-7700 Private Property 854-8020
Damaged Sidewalk 350-6760
Narcotics Activity 800-782-7463
Nuisance Payphone 350-7700
Loud Noise Complaint 350-7700
Nuisance Bar 350-7700
BAR
Overflowing Dumpster 822-2396
Car or Building Alarm 9-1-1
Non-Working Traffic Signal 350-7610
Traffic Problem 350-7610
Gangs 350-7700
Dead Animal 350-7700
Trash/Overgrown Weeds in Street 350-6760
City Parks Hotline 428-7275
Community Assistance Program CAP 803-1059 ext 198
Updated 08/12/2015

FONTANA
CALIFORNIA

FONTANA'S LET'S MOVE ON THE TRAIL

OCTOBER 8, 2016 9AM – 1PM

Health, Safety & Fitness Expo

Pacific Electric Trail between Cypress Avenue & Mango Avenue

Vendor Booths | Farmers' Market
Games & Activities | Giveaways



Bike & Family Walk/Run Event

Bike event starts at North Heritage Circle & ends at Miller Fitness Center
Family Walk/Run event starts on Cedar Avenue & ends at Miller Fitness Center

Walk/Run Event in conjunction with Healthy Rialto.

Register for the Bike or Walk/Run Event at HealthyFontana.org.



Fontana Police Department Open House

17005 Upland Avenue

Station Tours | Police SWAT Vehicles | Helicopter & Equipment Displays
Live Demonstrations by Bicycle, Motorcycle, K9's & SWAT



John B. Roberts Fire Station #71 Open House

16980 Arrow Boulevard

Station Tours | Live Auto Extrication Demonstration | Home Fire Safety Simulator
Hazardous Materials Response Unit | USAR Team Display | Fire Safety Info Booth

Healthy Fontana Pets Expo

Seville Avenue located near the water fountain (Pet designated area)

Low Cost Vaccine Clinic | Dog Bite Safety Booth | Critters for the Kids
Animal Food and Safety Vendors | Costume Contest

SAN BERNARDINO COUNTY

HEALTHYFONTANA.ORG | (909) 350-6542

CHAMPIONS for CHANGE

HEALTHY FONTANA

For CalFresh information, call 1-877-847-3663. Funded by USDA SNAP-Ed, an equal opportunity provider and employer. Visit CaChampionsForChange.net for healthy tips.

FONTANA
CALIFORNIA

FONTANA'S A MOVERNOS EN EL SENDERO

OCTUBRE 8, 2016 9AM – 1PM

Exposicion de Salud, Seguridad y Forma Fisica

Exposicion situada en Pacific Electric Trail entre avenida Cypress y avenida Mango

Puestos de Vendedores | Mercado de Agricultores
Juegos y Actividades | Regalos



Evento de Ciclistas y Caminata/Correr en Familia

Evento de Ciclistas empieza en North Heritage Circle y concluye en Miller Fitness Center
Caminata/Carrera en Familia empieza en Cedar Avenue y termina en Miller Fitness Center

Evento do Caminata/Carrera en conjuncion con Healthy Rialto.

Se puede registrar al evento de Ciclistas y Caminata en HealthyFontana.org.



Departmento de Policia de Fontana, Casa Abierta

17005 Upland Avenue

Tours de Estacion | Vehiculo SWAT de la Policia | Helicoptero y Demonstracion de Equipo
Demonstraciones en Vivo de Policias Ciclistas, Motocicletas, K9's y SWAT



John B. Roberts Estacion de Bomberos #71 Casa Abierta

16980 Arrow Boulevard

Tours de Estacion | Demonstracion en Vivo de Extraccion Automoviles
Simulacion de Fuego para Seguridad de Su Casa | Materiales Peligrosos Unidad de Respuesta
Demonstracion de Equipo USAR | Puestos de Informacion de Seguridad al Fuego

Exposicion de Mascotas de Healthy Fontana

Seville Avenue situado cerca de la fue de agua (designada para las mascotas)

Clinicas de Vacunas a Bajo Costo | Puesto de Seguridad en Caso de Mordidas de Perro | Bichos para los Ninos
Vendedores de Comida y Seguridad para los Animales | Concurso de Disfraces

SAN BERNARDINO COUNTY

HEALTHYFONTANA.ORG | (909) 350-6542

CHAMPIONS for CHANGE™

HEALTHY FONTANA

Para informacion sobre CalFresh, llame al 1-88-9-COMIDA. Financiado por SNAP-Ed del USDA,
un proveedor y empleador que ofrece oportunidades equitativas. Para consejos saludables, visite www.CampeonesDelCambio.et.

Red Ribbon Breakfast 2016

"You Only Live Once. Be Drug Free."

You are invited to attend the 2016 Red Ribbon Breakfast, hosted by the Fontana Police Department, Fontana School Police Department and Fontana Unified School District

Please help us spread the message of prevention!

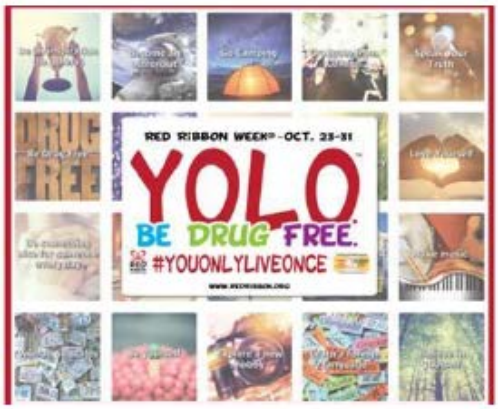
In addition to ticket sales, we are looking for sponsorships for students to attend this event.

Guest Speaker

The Hon. Judge Enrique S. Camarena Jr.

Thursday, October 20th
8:00am—9:30am

Jessie Turner Community Center
15556 Summit Ave.
Fontana, California



Tickets are $10.00 each

For ticket or sponsor info please contact:

City of Fontana Police Department

Olga A. Hernandez
909-350-7758

FONTANA

Emergency

Communication

Services



HAVE YOU EVER WANTED TO LEARN HOW TO OPERATE A HAM RADIO?

HAM operators have assisted the public for many years in emergencies. They provide communications for various civil and community events.

Purpose of ECS

The key word here is emergency! An emergency is defined as a sudden, unexpected occurrence of a serious nature that demands immediate action. The news media floods us with information about toxic spills, earthquakes, forest fires, searches for lost persons, and more on a daily basis. Often, these situations are reported by private radio operators, thereby insuring a quick emergency response and, in many cases, preserving life and property.

When emergencies occur, it is sometimes in areas where normal police or fire communications are not sufficient. At times like these, HAM operators come to their aid by providing a communications network that has proved itself over and over again.

Classes are now forming for those interested in obtaining their Amateur Ham Radio License. Space is limited. The instruction is free but a workbook is recommended for a cost of approximately $25.00. Test fee is $15.00 due at time of test.

NEXT CLASS SESSION IS 9/27, 9/29, 10/4, 10/6 (test night).

TIME: 6:00 P.M. TO 9:00 P.M.

LOCATION: Fontana PD at 17005 Upland Ave. Fontana, 92335

Contact Olga Hernandez at 909-350-7758 to sign-up.

VIOLATIONS

FCC15-602 $2,500.00	No person shall posses, sell, use, dis play or explode any "Dangerous works"
FCC15-616	(a) May discharge "Safe and Sane Fireworks" between 9:00am and 11:00pm (June 28th – July 5th)
$250.00	(b) It shall be unlawful for any person to ignite, discharge, project or other wise fire or use, any "Safe and Sane Fire works" upon or over or onto the property of another without consent.
$250.00	(c) No "Safe and Sane Fireworks" shall be discharged on public , semi public or private open areas. No fireworks shall be discharged in the "high fire hazard areas," described as follows: Property within the City which is west of Interstate 15, north of Summit Ave and east of Lytle Creek Road.
FCC15-617 $250.00	Unlawful for any person to allow mi nor (under 18 years old) to discharge, explode, fire or set off any "Safe and Sane Fireworks" unless supervised by an adult 18 years of age or older.
PC12677	Posses illegal fireworks without a per mit.
PC12303.3	Possession, explode, ignite or attempt to explode destructive device.
PC246.3	Negligent discharge of firearm.
PC12303.6	Transport of explosive device.
HS12689	(a) Sell, give, deliver dangerous fire works to anybody.

During the 4th of July hol-iday we are asking residents to have a good time with their neighbors and enjoy "Safe and Sane" fireworks

HAVE A SAFE AND SANE 4TH OF JULY
FONTANA POLICE DEPARTMENT

FPD 452 6/16

CITY OF FONTANA



ILLEGAL FIREWORKS INFORMATION LINE

(909) 356-7101

YES, THERE IS A DROUGHT GOING ON!!

Here are some tips to help you keep Fontana beautiful, while doing your part to reduce water usage around your home and

- Currently, local water companies are not rationing water, so you can use water wisely
- Governor Brown has asked ALL Californians to voluntarily reduce water use by 20%
- Only water landscaped areas between the hours of 4 p.m. and 9:00 a.m.
- Use a broom instead of hosing off paved areas like driveways and sidewalks
- Use shutoff nozzles on all hoses
- Check your sprinklers frequently and reduce any overspray
- Don't just stop watering and let your yard die. Barren dirt and dead grass are violations of city laws,
- Xeriscape is an option - the use of drought tolerant plants in combination with decorative rock features (See reverse)
- Adding decorative hardscape can reduce the amount of water needed to maintain an appealing home. Up to 25% of the front yard setback can be made up of decorative hardscape. Decorative Hardscape includes: Brick, gravel, stamped concrete, and stone.
- Non decorative hardscape can also be used on up to 50% of the front yard setback to cut water use. Non decorative hardscape includes driveways, walkways, and porches, and generally consists of asphalt or concrete.
- Synthetic turf/artificial grass can be used but needs to be approved by the planning department before it is installed. The Planning Department can be reached at: (909) 350-6558.

Check with your local water company for more water saving tips

Links with more useful information:

http://www.sb.watersavingplants.com/#

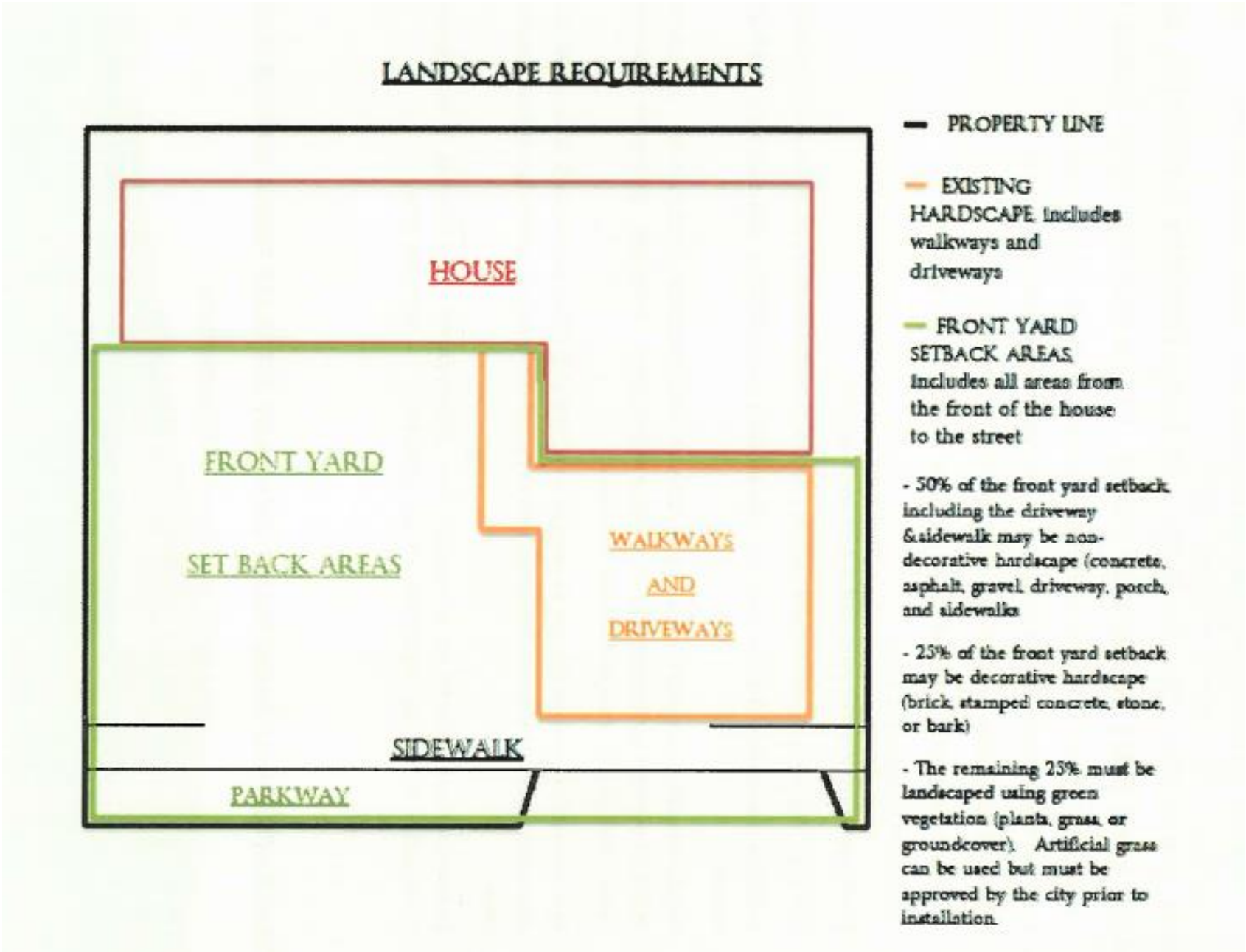
http://www.fontanawater.com/conservation.php?id_pge=9

http://www.fontanawater.com/

http://www.cvwdwater.com/

Fontana Police Department Code Compliance Unit

(909) 854-8020


LANDSCAPE REQUIREMENTS
HOUSE
FRONT YARD
SET BACK AREAS
WALKWAYS
AND
DRIVEWAYS
SIDEWALK
PARKWAY
PROPERTY LINE
EXISTING HARDSCAPE Includes walkways and driveways
FRONT YARD SETBACK AREAS Includes all areas from the front of the house to the street
- 50% of the front yard setback including the driveway &sidewalk may be non-decorative hardscape (concrete, asphalt, gravel, driveway, porch, and sidewalks
- 25% of the front yard setback may be decorative hardscape (brick, stamped concrete, stone, or bark)
- The remaining 25% must be landscaped using green vegetation (plants, grass, or groundcover). Artificial grass can be used but must be approved by the city prior to installation.



FONTANA FIRE DISTRICT

Preparedness in Action by Learning about Safety

Hello and welcome to our Fire P.A.L.S. program. Our objective is to educate families about the importance of fire safety in the home. Please read the instructions below, and with your help, we can reach out to as many of our Fire P.A.L.S. as possible. We are always open to your questions and comments.

WHAT PARENTS NEED TO DO

Practice the exit drill with your family

- **Know two ways out** for example, a door or window.
- **Pick a meeting place** for example, someplace safe outside and away from home.
- **Test your smoke alarms** by pushing the button.

Complete the Survey Card with your child

- **Fill out the information with your child** make sure the back is signed and returned.
- **Have your child draw a plan of your house** be sure to include exit routes and meeting places.
- **Have your child return the survey card**. The card will be put in a drawing for a free prize!

Talk about fire safety as a family

- **Help those with special needs that may need extra help.** If you don't have working smoke detectors, you may be eligible to receive smoke alarms as part of our Fire PALS program.

WHAT TEACHERS NEED TO DO

Pass out the survey card and this information sheet

- **Collect the survey cards, filled out by students**.
- **Hold the drawing for free prizes!** Make sure to contact the Fire Department and receive the prizes.

Refer those with special needs

- **Those without functioning smoke alarms**. Refer any who indicate "I do not have working smoke alarms in my home" on their survey card.
- **Those who are hearing impaired or have disabilities**. Again, if they indicate this on their survey card.
- **For those who have special needs** fill out a release form. Then forward the request to us by calling (909) 428-8890 or email firepals@fontana.org

Make fire safety a school year-long topic

- Talk about and encourage fire safety in the home.



FONTANA FIRE DISTRICT

Preparedness in Action by Learning about Safety

Hola y bienvenido a nuestro programa P.A.L.S. Nuestro objetivo es educar a nuestras familias de la importancia de la prevención de un incendio. Por favor lea las instrucciones abajo. Con su ayuda, podremos alcanzar a muchos de nuestros Fire P.A.L.S. Siempre estamos abiertos a sus preguntas y comentarios.

LO QUE PADRES TIENE QUE ACER

Practicar simulacros de salida con su familia

- **Conocer 2 salidas de escape en el hogar,** por ejemplo una puerta o una ventana, gatee por abajo en caso de humo, toque la puerta antes de abrirla pare ver si está caliente.
- **Elegir un punto de encuentro,** como algún lugar fuera de a salvo y lejos de su hogar.
- **Probar los detectores de humo,** Presione el botón de prueba en cada detector para asegurarse de que hace bip, si es necesario remplace la batería.

Completar la tarjeta de encuesta con su hijo

- **Llene la información con su hijo,** Firme la tarjeta en la parte posterior.
- **Ponga a su hijo a dibujar un plano de su casa,** Asegúrese de incluir las rutas de salida con lugares de encuentro.
- **Haga que su hijo devuelva la tarjeta de la encuesta,** La tarjeta entrara en un sorteo para ganarse un premio

Hable sobra la seguridad contra incendios en familia

- **Ayude a las personas con necesidades especiales** Asegúrese de hacernos saber si usted no tiene detectores

LO QUE LOS PROFESORES TIENEN QUE SABER

Distribuir la tarjeta de encuesta y esta hoja de información

- **Recoger las tarjetas de encuesta, hechas por los estudiantes**
- **Celebrar un sorteo de un premio gratis!** Asegúrese de ponerse en contacto con el departamento de Bomberos para sus premios.

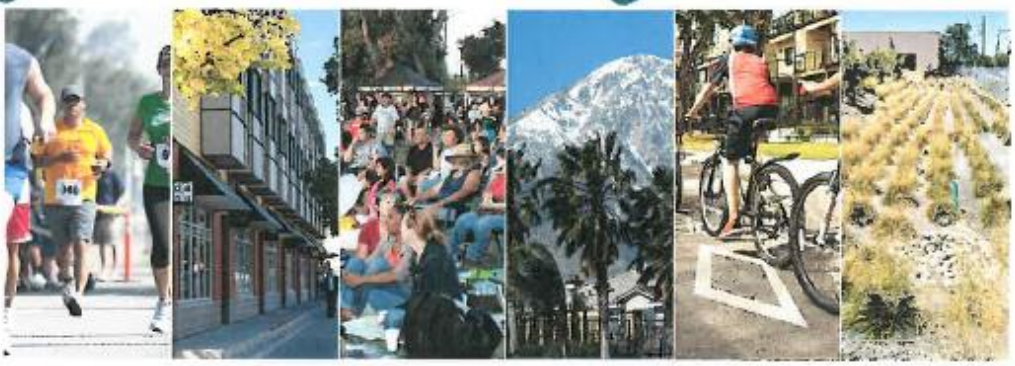
Refiere aquellos que tenga necesidades especiales

- **Los que no tengan en funcionamiento los detectores de humo.** Referirse a cualquiera que indico "Yo no tengo alarmas detectoras de humo en mi casa" en su tarjeta de encuesta.
- **Aquellos que son sordos o que tengan deseabilidades** por lo tanto recoger y remitir esto el departamento de los Bomberos.
- **Para aquellos que tienen necesidades especiales.** Por favor haga que llenar un formulario de liberación. Entonces podrán enviar a solicitud por teléfono a (909) 428-8890 o correo electrónico firepals@fontana.org.

Haga la contra incendios un tema de discusión todo el año escolar.

10/24 SAVE THE DATE

What's **your** vision for Fontana's **future?**



Fontana Forward
CITYWIDE VISIONING FORUM

Saturday, October 24, 2015, 9 am to noon

Fontana Community Senior Center, 16710 Ceres Avenue
[Spanish translation and discussion tables will be available]

Refreshments

Families welcome; children's games and on-site childcare

Free gift bag
(while supplies last)

Join residents from across the city to create a vision for our future! The City of Fontana is updating our General Plan in 2015-16.

We need you—and your family, friends, and neighbors—to help plan for Fontana's next 20 years. This is the first of many opportunities to participate.

To learn more, please visit **www.fontanaforward.com** or contact Maria Torres at **mtorres@fontana.org** or 909-350-6728.

Fontana Forward
FONTANA GENERAL PLAN UPDATE 2015-2035

CITY OF FONTANA | COMMUNITY DEVELOPMENT DEPARTMENT | 909-350-6717

This is not a school sponsored activity and this material was not made at school expense.

10/24
RESERVE LA FECHA

Cuál es **su** visión para el **futuro** de Fontana?



Fontana Forward
CITYWIDE VISIONING FORUM

Sábado,
24 de Octubre, 2015,
9 am-medio día

Fontana Community Senior Center,
16710 Ceres Avenue
[intérpretes y mesas de discusión en español estarán disponibles]

Refrescos y aperitivos

Todas las familias son bienvenidas; habrá juegos y cuidado para los niños en el centro

Bolsa de regalo gratis
[mientras duren las existencias]

Únete a los residentes de toda la ciudad para crear una visión para nuestro futuro! La Ciudad de Fontana esta actualizando el Plan General en el año 2015-2016. Necesitamos que usted, su familia, amigos y vecinos ayuden a planificar los siguientes 20 años de Fontana. Esta es la primera de muchas oportunidades para participar.

Para saber más de este proyecto, visite nuestra pagina de Internet a **www.fontanaforward.com** o comuníquese con María Torres al siguiente correo electrónico **mtorres@fontana.org** o por vía telefónica al **909-350-6728.**

Fontana Forward
FONTANA GENERAL PLAN UPDATE 2015-2035

CITY OF FONTANA | COMMUNITY DEVELOPMENT DEPARTMENT | 909-350-6717

This is not a school sponsored activity and this material was not made at school expense.

*Just **10 minutes** of your time can shape Fontana's **future.***

NEIGHBORHOOD OPEN HOUSES FOR THE GENERAL PLAN UPDATE

Tell us about your neighborhood. What's good? What needs improvement?

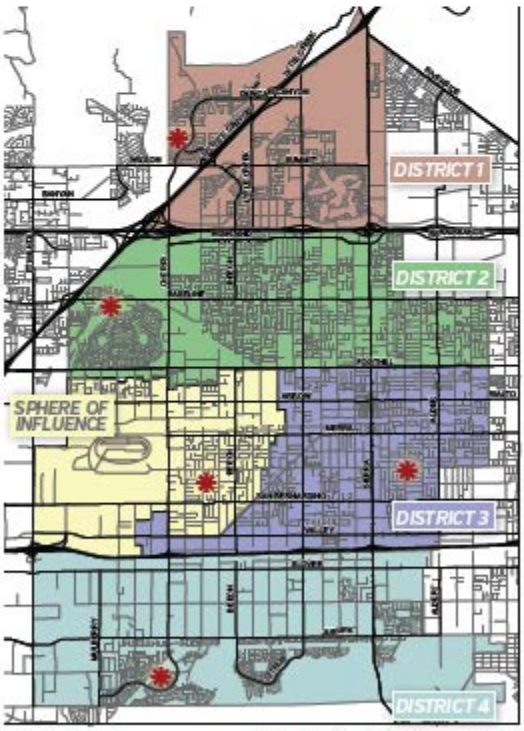
We don't need much time; in ten minutes you can:

- Find out about the General Plan update
- Talk to members of the planning team
- Share your thoughts about Fontana's future

Drop in anytime between 5:00 and 7:30pm at any of five open houses:

DISTRICT 1	Monday, December 7	**DAVID W. LONG SCHOOL** 5838 BRIDALPATH DRIVE
DISTRICT 4	Monday, December 7	**SOUTHRIDGE MIDDLE SCHOOL** 14500 LIVE OAK AVENUE
SPHERE OF INFLUENCE	Tuesday, December 8	**SEQUOIA MIDDLE SCHOOL** 9452 HEMLOCK AVENUE
DISTRICT 2	Wednesday, December 9	**HERITAGE CENTER** 7350 W. LIBERTY PARKWAY
DISTRICT 3	Wednesday, December 9	**PALMETTO ELEMENTARY SCHOOL** 9325 PALMETTO AVENUE

Note: If the date for the open house nearest you isn't convenient, stop by one on a different night.



Fontana Forward

For more information on the open houses or on the General Plan update, visit www.FontanaForward.com

Drop-in Open Houses for the Fontana General Plan

You told us your ideas for Fontana's future in public meetings, workshops, and surveys. **Now tell us what you think about the direction of the plan** at an open house.

WHAT?	WHERE?	WHEN?
Drop-in Open Houses for the Fontana General Plan	*Fontana Art Depot 16822 Spring Street, downtown*	*9:00 a.m. to noon, Saturday, June 11 and Saturday, July 9*

JUST A FEW MINUTES OF YOUR TIME HELPS MOVE THE PLAN FORWARD!
STOP BY THE FONTANA FORWARD OPEN HOUSE FOR 10-20 MINUTES TO FIND OUT MORE AND SHARE YOUR THOUGHTS.

SATURDAY, JUNE 11
PLANNING DIRECTIONS
Share your thoughts on the vision, goals and strategies being considered for the General Plan Update for housing, parks, jobs, transportation, and other topics.



SATURDAY, JULY 9
LAND USE & TRANSPORTATION
Tell us what you think about alternative ways of planning for land use and transportation in Fontana.

Fontana Forward
FONTANA GENERAL PLAN UPDATE 2015-2035

For more information on the workshops or on the General Plan Update, visit **www.FontanaForward.com** or call Catherine Lin, 909-428-8860, o llame a Maria Torres, 909-350-6728, para asistencia en español.

Foro de Información del Plan General de Fontana

Usted compartió sus ideas para el futuro de Fontana con nosotros en reuniones públicas, talleres y encuestas. **Ahora comparta con nosotros su opinión sobre lo que piensa de la trayectoria del plan** y acompáñenos en uno de los foros.

¿QUÉ?	¿DÓNDE?	¿CUANDO?
Foro de Información del Plan General de Fontana	*Fontana Art Depot 16822 Spring Street, en el centro*	*9:00 a.m. a mediodiá Sábado 11 de junio Sábado 9 de julio*

¡POCOS MINUTOS DE SU TIEMPO PUEDEN AYUDAR AL PROGRESO DEL PLAN GENERAL!

VENGA AL FORO DE INFORMACIÓN DE FONTANA POR 10-20 MINUTOS PARA CONOCER MÁS DETALLES Y COMPARTIR SUS IDEAS.

SÁBADO 11 DE JUNIO
RUMBO DEL PROCESO DE PLANIFICACIÓN

Comparta sus opiniones sobre la visión, los objetivos y las estrategias que se consideran para la actualización del plan general para la vivienda, parques, puestos de trabajo, transporte, y otros temas.



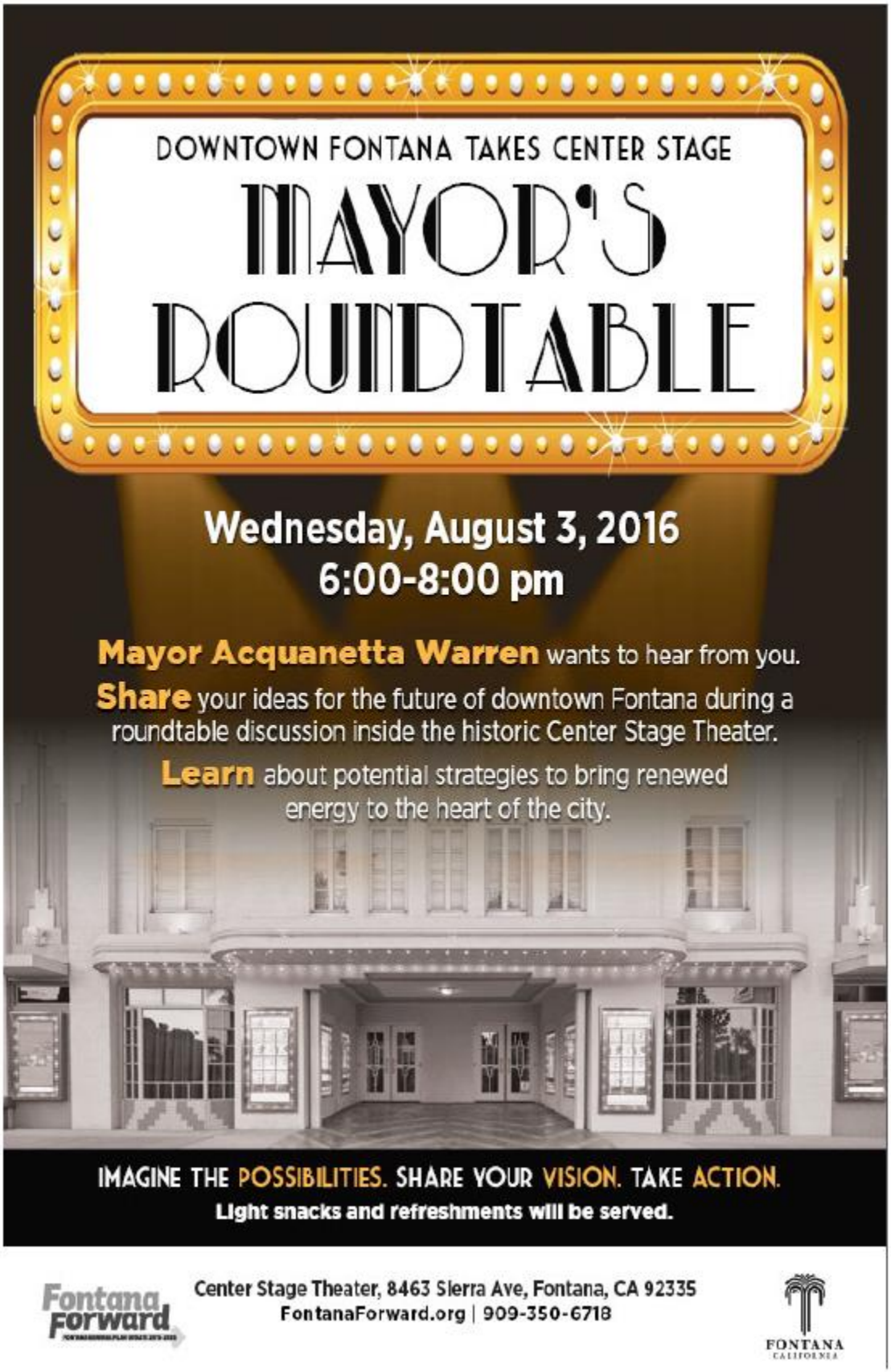
SÁBADO 9 DE JULIO
USO DE LA TIERRA Y EL TRANSPORTE

Díganos lo que piensa acerca de formas alternativas de planificación de usos del suelo y transporte en Fontana.

Fontana Forward
FONTANA GENERAL PLAN UPDATE 2015-2035

Para mas información, visite **www.FontanaForward.com**
o llame a Maria Torres, 909-350-6728


FONTANA ARTS FESTIVAL
Saturday, July 30, 2016
sábado, 30 de julio de 2016
5 pm – 10 pm
Fontana's
Sunset on Sierra
Meet us at Sunset on Sierra to experience the streets of Fontana completely car-free. Enjoy art, music and more at the Fontana Arts Festival as you bike, walk, skate or play along Sierra and surrounding streets.
Reúnase con nosotros en Sunset on Sierra para experimentar las calles de Fontana completamente libres de carros. Disfrute de arte, música y más en el Festival de Artes de Fontana mientras se divierta paseando por Sierra y las calles circundantes en bicicleta, a pie o en patines.
FONTANA
CALIFORNIA
gohuman
GoHumanSoCal.org
Presented by the City of Fontana and Go Human
Presentado por la ciudad de Fontana y Go Human


DOWNTOWN FONTANA TAKES CENTER STAGE
MAYOR'S ROUNDTABLE
Wednesday, August 3, 2016
6:00-8:00 pm
Mayor Acquanetta Warren wants to hear from you.
Share your ideas for the future of downtown Fontana during a roundtable discussion inside the historic Center Stage Theater.
Learn about potential strategies to bring renewed energy to the heart of the city.
IMAGINE THE POSSIBILITIES. SHARE YOUR VISION. TAKE ACTION.
Light snacks and refreshments will be served.
Fontana Forward
Center Stage Theater, 8463 Sierra Ave, Fontana, CA 92335
FontanaForward.org | 909-350-6718
FONTANA
CALIFORNIA

Shape the plan, shape the future.



General Plan Update

Land Use & Transportation

Open House

Saturday, October 29, 2016

9:00 am to Noon

Fontana Senior Center

16710 Ceres Avenue,

Fontana, CA

Fontana is updating its General Plan, setting the agenda for growth over the next 20 years.

Drop in for the open house any time between 9 am and noon to let us know what you think about plans for land use, parks, jobs, transportation, the economy and more!

For more information contact:

Project Manager, Dawn Rowe at 909.350.6694

Para información en Español:

Maria Torres at 909.350.6728

Fontana Forward
FONTANA GENERAL PLAN UPDATE 2015-2035
www.FontanaForward.com

FontanaCA | @CityofFontanaCA | Fontana.org

FONTANA
CALIFORNIA

City of Fontana
Hazard Mitigation Plan
Public Survey

Name: _____

Organization: _____

1. What **natural** or **man-made** hazard(s) concern you most in the Fontana area?

   ___ Earthquake

   ___ Flood/Winter Storm

   ___ Terrorism

   ___ Wildfire

   ___ Wind Surge

   ___ Climate Change/Drought

   ___ Other *(please write in)* _____

2. Do you work for an organization that provides a community service that you believe may be at risk from natural or man-made hazards?

   ___ Yes ___ No

   Discribe:_____

   _____

3. From your perspective, what is the most important thing that could be done to reduce our vulnerability from the potential effects of natural or man-made hazards?

   _____

   _____

   _____

Appendix C-1: Public Survey – Summary of Responses

Top Hazards:

1. Flood/Winter Storm

2. Wildfire

3. Earthquake

4. Climate Change

5. Terrorism

6. Wind Surge

Community Service Businesses at Risk:

The majority of residents that were surveyed did not feel their employer was at risk for natural or human-made hazards.

Vulnerability Reduction Priorities:

Awareness

Communication

Debris removal

Defensible space

Education

First aid

Preparedness

Prevention

Quality control

Safety codes

Weed abatement

San Bernardino County Fire
Office of Emergency Services

2016 Hazard Mitigation Plan Update
Consultant Meeting

1743 Miro Way
Rialto, CA 92376

Wednesday, June 1, 2016
1:00 p.m. – 2:30 p.m.

AGENDA

I. Welcome and Introductions

II. Contract Contacts:

   A. Dynamic Planning + Science
      1. Name
      2. Contact Information
      3. Area Covered/Expertise
   B. San Bernardino County OES
      1. Name
      2. Contact Information
      3. Area Covered/Expertise

III. Review of Contract Scope of Work and Expectations

IV. Timeline

V. Products Expected

VI. Kickoff Meetings

   A. Date/Time
   B. Location

VII. Next Steps

Meeting Agenda:
Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) 2016-17 Update
Stakeholder Update Meeting

DATE: Wednesday October 26, 2016
TIME: 2:00 p.m. – 4:00 p.m.
LOCATION: San Bernardino County Office of Emergency Services
ADDRESS: 1743 Miro Way, Rialto, CA 92376

- **Welcome and Introductions**
- **Project Updates**
  - Milestones / Tempo
  - Templates
  - Risk Assessments
  - Hazard Profiles
  - Outreach Material
  - California Planning Regulation Updates
- **Risk Assessment**
  - Section 4 Template
  - Data Acquisition / Edits
- **Next Steps**
- **Wrap Up**

For More Information on please visit www.mitigatehazards.com

San Bernardino County Fire
Office of Emergency Services

Hazard Mitigation Plan 2016-17 Update
Stakeholder Update Meeting #3

CONFERENCE LINE:	+1.408.740.7256 (US)
MEETING ID:	620550695 #
INSTRUCTIONS:	press # for Participant

Thursday, December 15, 2016
10:00 a.m. – 11:00 a.m.

AGENDA

I. Welcome and Introductions

II. Projects Updates

- Website Updates
- Milestones/ Tempo/ Schedule
- Section 4 Template

III. Risk Assessment

- Review and validate vulnerability assessment information
- Demonstrate how to insert the provided maps, tables and charts into Section 4: Risk Assessment.

IV. Next Steps

- Release of template for Section 5: Community Capabilities Assessment
  For more information see Phase 3 of the planning process here:
  http://mitigatehazards.com/planning-process
  or the planning process checklist here:
  https://www.dropbox.com/s/5rp1s0hqr8bnfl1/Planning%20Phases%20Checklist.docx?dl=0

- Release the template for Section 6: Mitigation Strategy
  For more information see Phase 3 of the planning process here:
  http://mitigatehazards.com/planning-process
  or the planning process checklist here:
  https://www.dropbox.com/s/5rp1s0hqr8bnfl1/Planning%20Phases%20Checklist.docx?dl=0

V. Wrap Up

For more information please visit: **www.mitigatehazards.com**

San Bernardino County Fire
Office of Emergency Services

Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) 2016-17 Update
Stakeholder Update Meeting #4

Conference Call
1-(408) 740-7256
Meeting ID 925721958#
Tuesday, February 14, 2017
1:30 p.m. – 2:30 p.m.

AGENDA

I. **Welcome and Introductions**

II. **Project Updates**

- Schedule
- Reminder to update flood information
- Updates to template since original 1/5/17 release
- Integrating the risk assessment into the capabilities assessment and mitigation strategy

III. **Community Capabilities Assessment (Section 5)**

- Capabilities on a local, regional, state and federal level (e.g. potential programs and grants)
- Budget highlights

IV. **Mitigation Strategy (Section 6)**

- Importance of problem statements for every profiled hazard
  - Determining mitigation goals, objectives and projects for each hazard
- FEMA's 6 broad categories of mitigation alternatives
- Prioritizing mitigation actions

V. **Next Steps**

- Draft admin plan for review
- Push plan out for public review

CITY OF FONTANA
FONTANA POLICE DEPARTMENT

TO: All attendees of the Area 1 West Community Meeting

FROM: Lieutenant Bill Megenney, Area 1 Commander

DATE: July 30, 2015

SUBJECT: **AREA 1 WEST COMMUNITY MEETING MINUTES OF July 13, 2015**

Sgt. Imhof

- Welcomed everyone to the community meeting and advised that there were several presentations schedule for the meeting.
- Advised he is currently the Crime Prevention Sergeant; however, in a couple weeks he will be promoted and will be replacing Lt. Megenney who is retiring. If you have any questions or concerns you a hold of him at Lt. Megenney's old phone number (909) 356-7142.
- Introduced the following members from City departments in attendance: Councilman Jesse Sandoval, Councilwoman Lydia Wibert Salazar, School Board member Matt Slowik, School Board member Jasmine Hall.
- Summer Concerts in the park are Thursday nights from 7-9 pm at Miller Park.
- August 7th will be the last car show for the summer
- National Night Out is August 4th

Officer Rick Bellis-Department of Fish and Wildlife

- The primary predator type animals in this general location are coyotes, mountain lions, and bears.
- Coyotes-
  - There are more coyotes now than there was in 1800.
  - They now live everywhere.

- They eat livestock, poultry, trash, dog food, berries, foxes, snakes, and rodents.
- Mainly active during the night. You will probably see them from dusk to dawn.
- They can weigh up to 45 lbs and they have small pointed ears and are usually gray or brown in color.
- They breed between February and March, the pups are learned not to fear people.
- They likely associate people as an easy food source.
- Will usually go after smaller dogs and cats unless they are in a pack then they will take on a larger dog.

- Black Bears-
  - All bears in California are black bears
  - They occupy all mountain ranges in the state.
  - Usually stand about 5 to 6 feet and can weigh up to 600 lbs.
  - Lives up to 30 years.
  - They are omnivorous and will eat anything and everything
  - They have great vision and they see in color.
  - Their hearing is twice the capacity of a human.
  - Generally solitary animals unless it's a mam bear with her cubs.
  - The state wide bear population is increasing and is currently about 30,000.
  - Be bear aware-do not put trash outside, make sure you wrap food up.
  - It's a people problem not a bear problem.
  - Bears are attracted to anything smelly, such as beehives, orchards, gardens, and livestock.
  - Make sure you securely close locking dumpsters.
  - If you encounter a bear:
    - Do not run
    - Give the bear plenty of room
    - Stand and face the animal
    - Look large
    - Back away slowly

- Mountain Lions-
  - When a lion kills something they will clamp on the back of the head and crush the skull.
  - Males weigh up to 165 lbs and females can weigh up to 100 lbs
  - They live up to 12 years in the wild and 30 years in captivity
  - They hunt but they also kill for the sake of killing, so if you see a freshly killed deer there is probably a mountain lion nearby.
  - Each deer requires 8 to 10 lbs of meat per day.
  - Their diet consists of deer, elk, porcupines, small mammals, livestock, and pets.
  - Avoid hiking or jogging between dusk and dawn.

- If you encounter a mountain lion:
  - Do not run
  - Look big
  - Throw rocks at it
  - Do not turn your back to it
  - Make loud noises
  - If attacked fight back, they are not looking for a fight.

- Do not feed deer. Deer attract mountain lions.
- Do not leave pets outside

- What does the Department of Fish and Wildlife do:
  - Assess potential human conflict
  - Advise on preventative measures
  - Investigate depredation
  - Evaluation of recurrent nuisance activity
  - Respond to public safety incidents, injured or orphaned wildlife

- If they do issue a depredation permit you will need to kill the animal or hire someone to kill them for you.
- Mountain lion attacks on humans are very rare.
- Studies have shown relocation does not help anything it just creates continued nuisance behavior or death of the animal from them trying to return to the area they know.
- In California there are only black bears not grizzly bears. They will not attack a human unless they feel they are in danger or are looking for food.
- If you live in the area where you are visited by deer do not feed them, it is illegal plus deer will attract mountain lions. You can deer proof your landscaping by avoiding plants that deer like to eat. Trim brush to reduce hiding places and do not leave small children or pets outside unattended between dawn and dusk.
- If you see a mountain lion do not approach it, don't run, face the animal and make noise. You want to make yourself look bigger, throw rocks and if attacked fight back.
- Never feed or attempt to tame a coyote.

Erik Garwick-Public Works Parks and Landscape

- The city manages over 23 million square feet (530 acres) of irrigated landscaped area
- 459 water meters
- 489 irrigation controllers
- The city knows how much water to use at a park by figuring out how much water we lost due to evapotranspiration. Then they have to determine which sprinkler system would be better to how many inches of water a set sprinkler at that location can apply to the property.
- The city only wants to apply the amount of water needed, so we created a water budget for each meter.

- The city has programmed the field controllers to come on based on how many minutes it takes to meet the water budget for a particular day.
- To help us manage water we also use GIS technology to create a tool that compares water budget targets to actual water use.
- What can you do as a resident:
    - Visiting your local water agency's website to take advantage of rebates and offers that might be available for residential homes.
    - Follow all drought regulations as described on your local water agency's website
    - Pay close attention to your water usage and minimize water use wherever possible.

Sgt. Imhof

- Stats throughout the City of Fontana
    1. 911 Wireless calls
    2. Medical Aids
    3. Animal Calls
    4. 415-fights/disturbances
- Stats for Area 1
    1. Extra Patrol
    2. Vehicle Checks
    3. 911
- Vehicle theft and break ins are a continual problem city wide. If you have a car alarm makes sure you set it. If you see someone in your area you know does not belong there please do not hesitate to call dispatch to have an officer check it out.
-

Questions and Concerns of the Residents of Area 1:

What is the status of the mountain lion who attacked the dog in Hunter's Ridge? About a mile from here a man shot a mountain lion who was attacking his goats. There is no confirmation that this was the same mountain lion however it is highly likely that it was the same one.

If someone encounters a bear are they supposed to act big? If someone encounters a bear they should make noise and act big, if they are attacked you have to fight back and fight it off.

What if the coyotes are not scared of noise? You have to remove the incentive for them being in your neighborhood. Pick up your pet's food when they are done eating and their water bowl too. Do not leave small pets outside unattended. Never turn your back on them, throw rocks at them if you have to.

What are the chances of a coyote breaking through a screen door to get food or to get to your pet? It is not likely they will break through your screen door.

Where does the city get their water from? Erik Garwick stated most of the water used is potable however some of the water is reclaimed. The city has changed watering times to follow the water restriction just like everyone else.

The sprinklers on Bridle Path along Frontage the sprinklers are shooting everywhere and they are on like every day. Erik Garwick advised the sprinklers should not be on every day they should only be turning on 2 days a week.

With the new water restrictions are we going to be getting back a refund because we won't be using so much in water costs. The landscaping maintenance fund only one small part of that goes to the water. That money is used to maintain that specific district and if the money isn't used on water it will be used to maintain the district in another way.

This was by far the worst year with fireworks. Sgt. Imhof advised we put out as much man power as we could. We had over 50 officers in addition to our normal patrol officers out the night of the 4th of July. A couple of years ago there was a vote out there to ban all fireworks safe and sane ones however that vote did not pass. If people are still lighting them off please call our dispatch.

Statistically when the overpass opens up at Duncan Canyon, how much more crime can the residents of Hunter's Ridge expect? Sgt. Imhof advised there is no way to know. For sure we will monitor traffic and it is probably unlikely that there will be an increase in crime in the area.

Thanked Fontana Pd for putting officers at the overpass but thought it might be a better idea for them to have a security guard at the location rather than a police officer.

Does the police department do background checks on the people who volunteer for vacation patrol. Sgt. Imhof advised all of our volunteers do have a background check done. They are good people.

When they do vacation patrol how often do they go through the neighborhood. They will patrol the neighborhood at least once a day but could be more just depending on how many are on patrol that day.

Why can't Lytle Creek Road to Duncan Canyon North be opened. Dave Teater with Traffic Engineering advised he will have to research that and get an answer for him at a later date.

THE NEXT MEETING DATE IS SCHEDULED FOR MONDAY, October 5, 2015 AT D.W. LONG ELEMENTARY, 5383 BRIDLEPATH DRIVE, FONTANA, CALIFORNIA 92336 AT 6:30 PM.

PLEASE SUBMIT ANY ITEMS FOR THE NEXT MEETING'S AGENDA BEFORE OCTOBER 1, 2015 TO:

Amber Smith

Fontana Police Department
17005 Upland Avenue
Fontana, California 92335
(909) 356-7171
Email: asmith@fontana.org

CITY OF FONTANA
FONTANA POLICE DEPARTMENT

TO: All attendees of the Area 4 Community Meeting

FROM: Lieutenant Stover, Area 4 Watch Commander

DATE: October 30, 2014

SUBJECT: **AREA 4 COMMUNITY MEETING MINUTES OF OCTOBER 30, 2014**

Lt. Stover: astover@fontana.org 909-350-7707

- Introductions: Senior Civil Engineer Jonathan Wu, Assistant Planner Dawn Rowe, Associate Planner Paul Gonzales, Community Services Jenny Espinoza, Code Compliance Manager Ted Porlas, City Councilmember Jesse Sandoval.

- Welcomed everyone to the meeting.

- She is the area commander for Area 4, which is everything south of the 10 freeway.

- Calls for service from January until October 30, 2014

    1. Traffic stops
    2. 911W1
    3. Extra patrol
    4. 911W2
    5. Animals
    6. Vehicle Checks
    7. Medical Assists
    8. 415 subjects
    9. 911 from a landline
    10. Follow up calls

- Part1 calls from January to today is down 12 %
- City events
    - Halloween trick or treat events at the Community Centers
    - Stand up and Speak
    - Veteran's day Celebration
    - Christmas tree lighting
    - Festival of Winter and the Christmas parade

Planning-Dawn Rowe and Paul Gonzales

- The city recently annexed the area of Kaiser to Mulberry and Jurupa to the 10 freeway. It is considered the Almond Avenue Annexation.

- This annexation consisted of 486 acres-the majority of the area is zoned for industrial, however the area closest to Southridge will be zoned for lighter industrial.
- There are 150 property owners and about 393 people who live in this area.
- There are still lots of undeveloped land in this annexation.
- Currently 17 properties are considered residential trucking districts.
- Benefits of this area becoming City:
    - Police Services
    - Animal Control Services
    - Code Compliance
    - Street Sweeping service
    - Street Maintenance
- Code Compliance took over 26 open code cases from the county in this area.
- We annexed in the Fed Ex facility.
- Currently there are a lot of residential businesses in that area and each one will be treated when they are brought up on a case by case basis. It will depend on the permitting done by the county.

Questions and Concerns of the Residents of Area 4:

Asked if the split has been done where ½ of Bloomington would Fontana and the other ½ will be Colton.
Paul Gonzales advised Bloomington is not in our sphere of influence it will always either be county or possibly Rialto.

Does the newly annexed area still have septic tanks?
Paul Gonzales advised they probably still do however in the future they will have the ability to connect to the sewer.

Were the residents who are affected by this notified of the annexation by mail?
Dawn Rowe with Planning advised yes all the property owners were notified. Each one received a welcome packet with some city resource information.

What are the city's plan regarding the sidewalk and bus benches on Jurupa from Sierra to Cherry.
As developers start to come it and submit plans once those plans are approved it will be required of them to provide the sidewalks, as far as the benches for the buses that would be up to Omintrans. They city does not have any control over if they put in a bench there or not.

She has problems with kids parking on her street and drinking and smoking.

Lt. Stover advised if we know there is a repetitive issue such as this happening we will be able to address the issue. Any time they are parked there give us a call and have an officer go out to the location. We would like to handle these situations before they get too big.

There is a problem with homeless in Southrigde. As well as graffiti along the water tower along the service road.

Asked what was being built on Citrus and Jurupa near Santa Ana.
Paul Gonzales advised there is currently an application that is going to the planning commission in December. They are planning on building 3 large industrial buildings.

Advised she was walking in Southridge Village Park between 8:30 to 9am and there was a group of boys not sure if they were high school or middle school. They were at the park smoking marijuana. Asked what should she do if she sees this again?
Lt. Stover advised you can call either Fontana Police Department or if they look like they are school aged children and it is during school hours you can call the Fontana School Police Department.

Advised Bloomington High School has late start every Wednesday so they may have been students from Bloomington High School.
Lt. Stover advised if it is in progress you can go ahead and call our police department dispatch.

At Jurupa Vista Elementary School they did a drive thru pickup and drop off zone and now the curbs are painted red. There are no longer any crossing guards at the location, it is getting dangerous for the kids out there.
Lauren Popescu advised he just recently did a survey out there upon request from the principal and the volume was too low to warrant a crossing guard. The school district stopped having crossing guards due to the budgets constraints. Cpl. Schlotterbeck

PLEASE SUBMIT ANY ITEMS FOR THE NEXT MEETING'S AGENDA TO:

Amber Smith
Fontana Police Department
17005 Upland Avenue
Fontana, California 92335
(909) 356-7171
Email: asmith@fontana.org

CITY OF FONTANA
FONTANA POLICE DEPARTMENT

TO: All attendees of the Area 3 Community Meeting

FROM: Lt. Robert Morris, Area 3 Commander

DATE: September 10, 2014

SUBJECT: **AREA 3 COMMUNITY MEETING MINUTES OF AUGUST 27, 2014**

Lt. Carlo Granillo

It was a priority of the City Council to make sure the Community meetings were accessible to anyone who wanted to attend. So the department purchased an electronic translating system which will allow anyone who is Spanish speaking hear the meeting in Spanish or it can also be used for other languages. Asked if there was anyone in the audience who needed translation services. Two people needed the translation service.

Introductions

Mayor Pro Tem John Roberts, Council member Jessie Sandoval, Community Services Courtney Hodnick, Public Works Sergio Quiroz, Streets and Utilities Robert Rigby Traffic Engineering Lauren Popescu, Traffic Cpl Schlotterbeck, Officer Nelson Romero, Officer Ryan Windell.

The area commander program addresses criminal and quality of life issues. The city is broken up into four area. Area 1 is everything north of the 210 freeway, Area 2 is from the 210 freeway to Foothill, Area 3 is from Foothill to the 10 freeway, and everything south of the 10 freeway is Area 4.

The community meetings are quarterly, they provide a connection for citizens to the city. It also provides the citizens a face to go with the name of their area commander. During the meetings we provide useful presentation and information that would be helpful for any resident in Fontana.

Do not wait until the next community meeting to bring up an issue. If you have a problem please contact your area commander so it can be addressed.

When you get a chance please visit the city of Fontana's website. It is a very useful resource. You can find the website at www.fontana.org.

Courtney Hodnick- Community Services

- 9/11 Remembrance will be held at the John B Roberts Fire Station. There will be refreshments and a memorial.
- Fontana fall sports registration is now taking place for more information go to www.fontanasports.org
- There are several cooling centers in Fontana if it gets too hot for anyone. The nearest one is the Cypress neighborhood Center.
- The Current Activities brochure is available online as well as on the handout table.

Sergio Quiroz-Public Works

- Renovation on the softball fields will start September 2, 2014.

Cpl. Schlotterbeck-Traffic Unit

- The traffic unit is trying to rotate between the 52 schools in the area. So please mind the 25 miles per hour zone in the school area.

Sharon Mitchell-Burrtec Waste Management

- In 2011, American generated about 250 million tons of trash and recycled and composted almost 87 million tons of this material.
- Average disposal is about 5lbs per person per day.
- The State of California set a goal of 6lbs per person per day and Fontana Residents on average is 3.5lbs per person per day.
- For Employment the goal statewide is 22.5lbs per person per day but in Fontana we average 15.5lbs per person per day.
- Make sure you reduce you waste and compost if possible.
- Reuse products
- Recycle what can be recycled.
- What can be recycled:
    - Fibers-mixed and white paper, card board and news print
    - Glass-bottles and jars
    - Metals- steel cans and aluminum cans
    - Plastics 1-7- water bottles, detergent bottles, packaging and expanding polystyrene
- What is backyard composting- It is organic decomposition of materials (green waste/food waste) into a beneficial amendment to soil.
- Why Compost- easy to do, decreases waste, healthy soils=healthy plants and erosion control.
- Scavenging is against the law if you see anyone going through the bins let Burrtec know and also call the non-emergency police department number to report it.
- Burrtec provides free mulch, it is given away every Saturday from 8am to noon at Public works.

Questions/Comments of Residents

Who does he contact to report drug activity? Lt. Granillo advised he will talk with him after the meeting to get the information

Does Burrtec have plans to education the residents on the bulk pickup service? Yes it is in the news letters that get sent out with the bill. Each resident get bulk items picked up 3 times a year up to 5 items each time for free.

Advised she is pleased with how the police department has taken care of loud music in the city on the weekends, it's really appreciated.

Does the city have a landscaping program to help residents conserve water? The city does not have a program however you can contact the Fontana Water company they have several programs.

THE NEXT AREA 3 COMMUNITY MEETING IS SCHEDULED FOR WEDNESDAY, NOVEMBER 26, 2014 AT 6:30 PM AT PALMETTO ELEMENTARY, 17244 RANDALL AVE.

PLEASE SUBMIT ANY ITEMS FOR NEXT MEETING'S AGENDA TO:

Amber Smith
Fontana Police Department
17005 Upland Ave
Fontana, CA 92335
(909) 356-7171
E-Mail: asmith@fontana.org

CITY OF FONTANA
FONTANA POLICE DEPARTMENT

TO: All attendees of the Area 2 West Community Meeting

FROM: Lieutenant Gary Aulis

DATE: August 14, 2014

SUBJECT: **AREA 2 WEST COMMUNITY MEETING MINUTES OF AUGUST 4, 2014**

Lt. Aulis

Advised the former Area Commander Lt. Ratcliffe recently retired and he has taken his place.

Has worked 25 years at the police department in numerous assignments to include bike unit, k9 handler, internal affairs and code enforcement.

As an ongoing commitment to the city and in an effort to improve law enforcement services to citizens the area commander program was created. The area commander program was designed to enhance current community-oriented policing methods. The city is broken up into four areas and each of those areas are assigned an area commander to deal with the quality of life issues. If you don't know who to call with a problem in the city you can always call your area commander and he will assist you.

Introductions- Community Services Jenny Espinoza, Public Works Sergio Quioz, Enviromental Services Kim Cameron, and Traffic Engineering Dave Teater.

If you haven't checked out the City of Fontana's Website lately you might want to there is lots of information on the website, such as the Car show which is the 1st Friday of every month through September and the farmers market which is every Saturday.

The new DMV office opened up today on Foothill and hemlock. The old one is now closed on Merrill.

Mayor Acquanetta Warren

- Advised we are living in an exciting times.
- She got an email from four people who said they were not going to come to the meeting because they were happy.

Sharon Mitchell-Burrtec Waste Management

- In 2011, American generated about 250 million tons of trash and recycled and composted almost 87 million tons of this material.
- Average disposal is about 5lbs per person per day.
- The State of California set a goal of 6lbs per person per day and Fontana Residents on average is 3.5lbs per person per day.
- For Employment the goal statewide is 22.5lbs per person per day but in Fontana we average 15.5lbs per person per day.
- Make sure you reduce you waste and compost if possible.
- Reuse products
- Recycle what can be recycled.
- What can be recycled:
    - Fibers-mixed and white paper, card board and news print
    - Glass-bottles and jars
    - Metals- steel cans and aluminum cans
    - Plastics 1-7- water bottles, detergent bottles, packaging and expanding polystyrene
- What is backyard composting- It is organic decomposition of materials (green waste/food waste) into a beneficial amendment to soil.
- Why Compost- easy to do, decreases waste, healthy soils=healthy plants and erosion control.
- Scavenging is against the law if you see anyone going through the bins let Burrtec know and also call the non-emergency police department number to report it.
- Burrtec provides free mulch, it is given away every Saturday from 8am to noon at Public works

Lt. Aulis-K9 Program

- The main reason we use dogs is to sniff out drugs.
- Our K9's are very social.

- They have a strong sense of smell. To give you an example: Chocolate cake, we just smell chocolate cake but the dog will smell the eggs, the flour, the sugar, etc all the ingredients that went into making that chocolate cake.
- They are very disciplined and very dependable.
- Recently dogs have even been noted to smell the body change in a diabetic when their blood sugar is low.
- Fontana Police Department has the largest K9 unit in the county. We have 6 dogs.
- We put two dogs out every day.
- Right now we have 5 dogs that are actually on patrol teams and 1 dog who is assigned to our narcotics unit. We would like to extend that.
- K9 pals are a nonprofit organization which was formed to provide financial support to the Fontana Police K9 unit.
    - Since 1990 they have purchased 15 police canines as well as vital equipment needed to train our dogs.
    - Over the past 3 years the K9 palls have supported the K9 unit's efforts to develop/build a training center which is now in full operation and has served k9 units from all over Southern California.

- The K9 Golf Tournament will be September 12th at Shandin Hills Golf Club. This is one of the major fundraising events to help the K9 program.

Questions and Concerns of the Residents of Area 2 West:

Can Styrofoam be recycled? Sharon advised it can be recycled.

Do residents have to wash out the cans when they are recycled? Sharon advised Burtec does ask you give them a quick rinse to get any food waste off them.

Can the bags the newspapers come in be recycled? Sharon advised Burrtec recommend saving those and taking them into Wal-Mart or a grocery store where they have a recycle bin specifically for plastic bags.

When the trash cans are placed at the curb are they now the city's property. Sharon advised yes once they are placed at the curb they are now the property of the city and Burrtec.

How do you train a dog to sniff drugs? Do you give him the drugs so he craves it? Lt. Aulis advised no we do not. Any amount of drugs given to a dog could kill him. We train them with a toy so they can associate the smell with a reward being his toy.

If it is raining does that effect the dog's sense of smell? It could hinder it a little bit but they will eventually find it.

Do the officers get to take the dog home? Yes they do, the dog is like a part of the family.

Where do the dogs go when they retire? They stay with their current handler. The handler does about 6 or 7 years in this assignment. We have to have handlers with the best judgment

How would someone get their neighborhood watch signs replaced if they are faded. You would need to contact the Neighborhood Watch Coordinator Amber Smith at (909) 356-7171 or at asmith@fontana.org

There has been a rash of egg throwing and breaking of car windows between 2am and 6am. Lt. Aulis advised he will have to pull the calls for service to see if there is a trend but sometimes people do not report those types of things to us. We have Coplink where you can now file a report online. There is even a kiosk in the Police department lobby which allows you to report a crime.

Do you ever use the k9's to find missing children. We can use them for that but the Sheriff's department actually have a blood hound we would use if we needed to utilize a dog for that matter.

At Foothill and Mulberry they recently changed the traffic pattern however no signed was put up notifying right turn only lane. Traffic Engineering Dave Teater advised he is not sure why that happened but he will check on it.

When their neighbor waters their grass it floods his area, what can be done. You can call Code Compliance however the only problem is they will have to see that it is impacting your property.

On Foothill and East there is that really pretty waterfall fountain however if you are going east you cannot see it. What can be done to increase visibility? The other side of the street is Rancho Cucamonga. We will have to see what we can do to increase visibility.

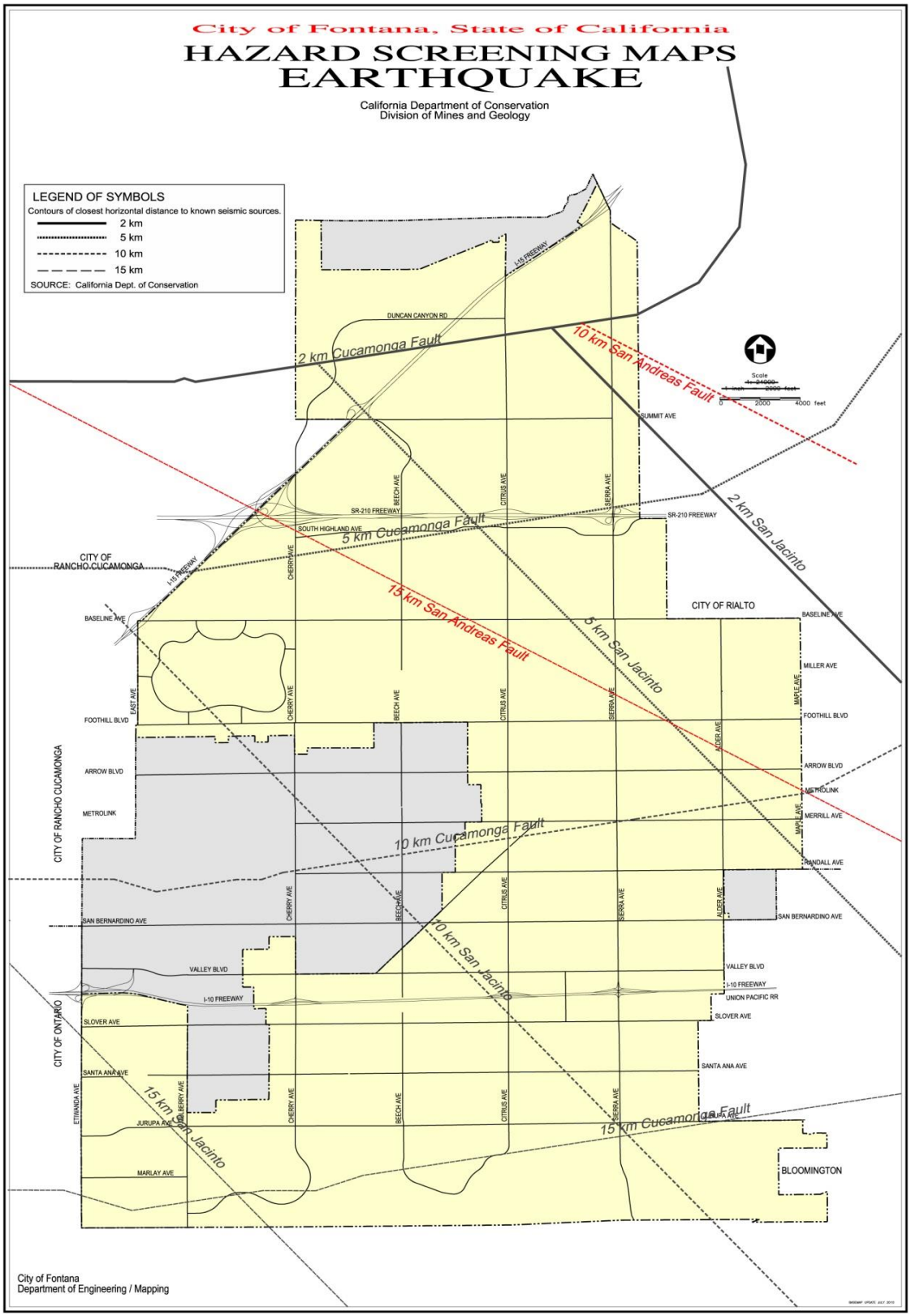
On the trail at Foothill and East sometimes there is broken glass on the sidewalk for weeks. Sergio Quiroz with Public Works stated the landscapers are supposed to be picking up broken glass. He will make sure they address that issue.

There are about 8 or 9 dead trees on East Liberty from Banana to Roanoake. Also the sprinklers are watering the street instead of the parkway. You can call 428-PARK to report the issues so they can be taken care of.

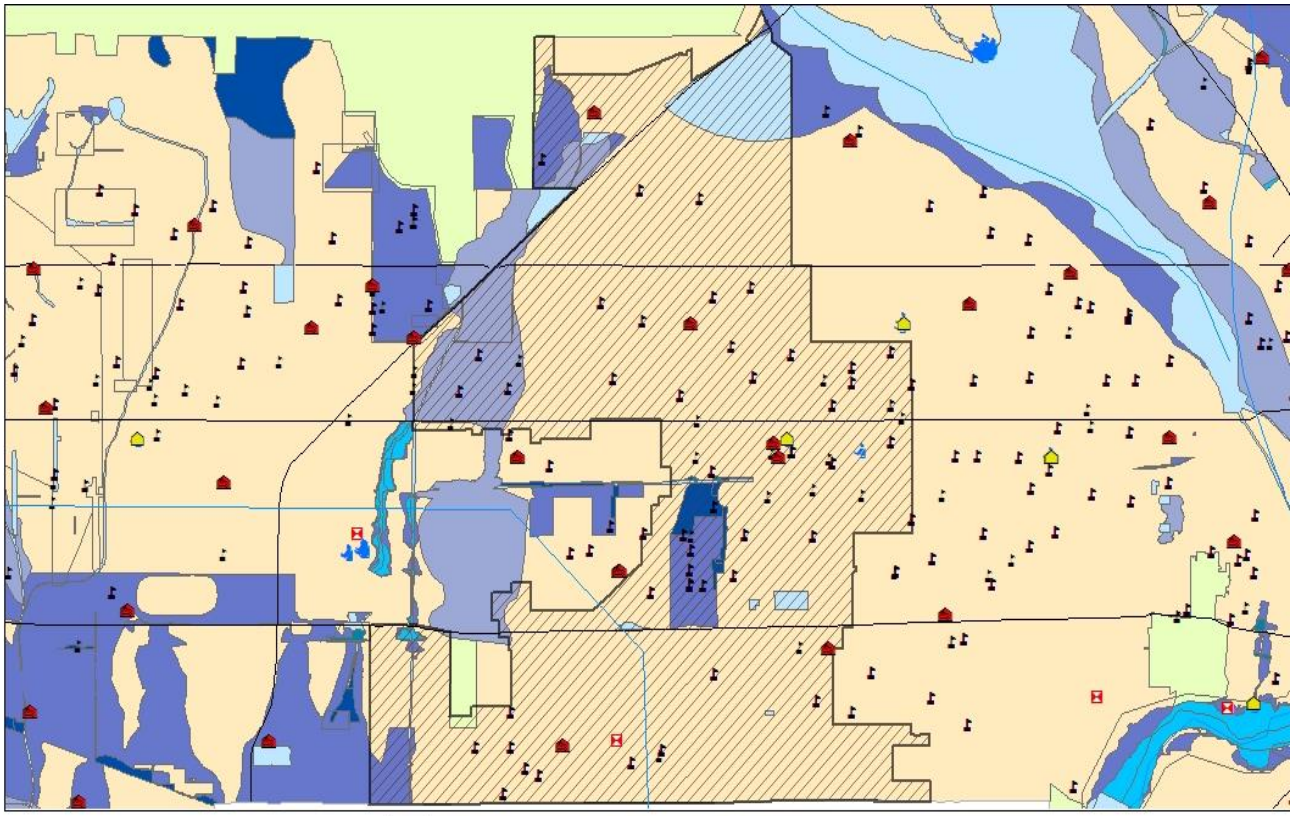
Lives on Bennington Court and a No Outlet sign was installed was wondering why that was? Dave Teater with Traffic Engineering advised it was probably because it was requested and due to the traffic going into the area.

APPENDIX E – Hazard Screening Maps

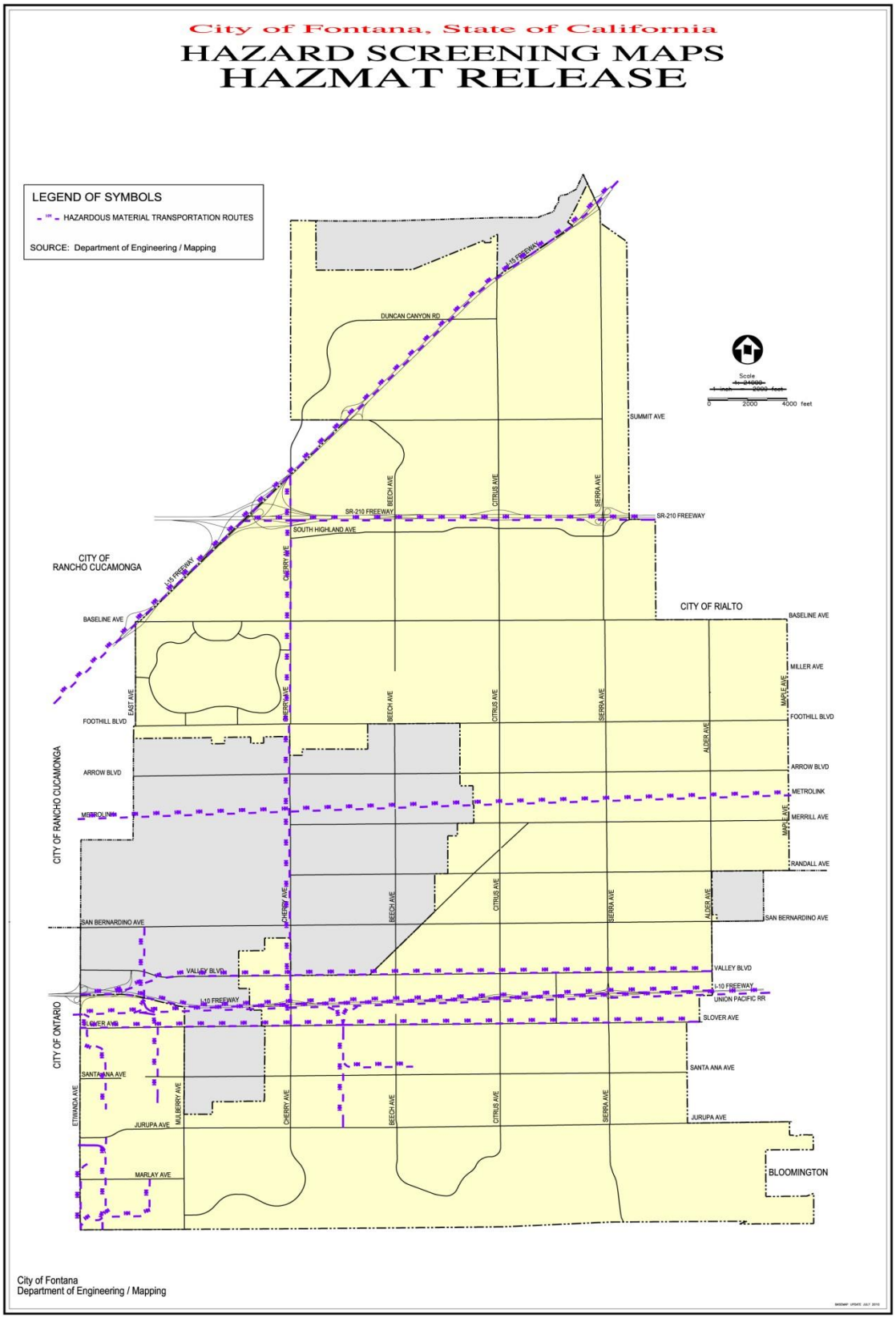
Map 1: City of Fontana Earthquake



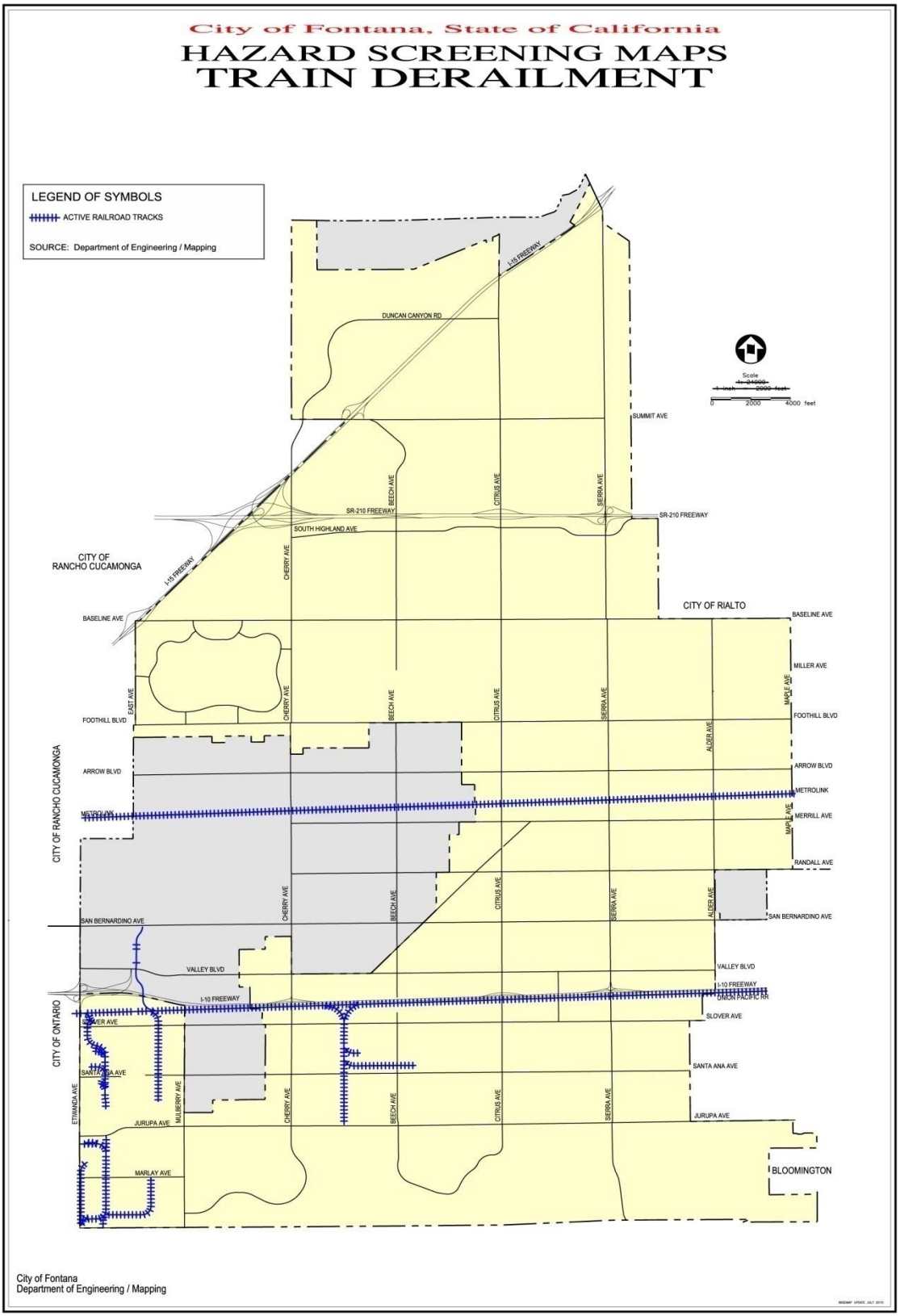
Map 2: FEMA Flood Hazard Areas



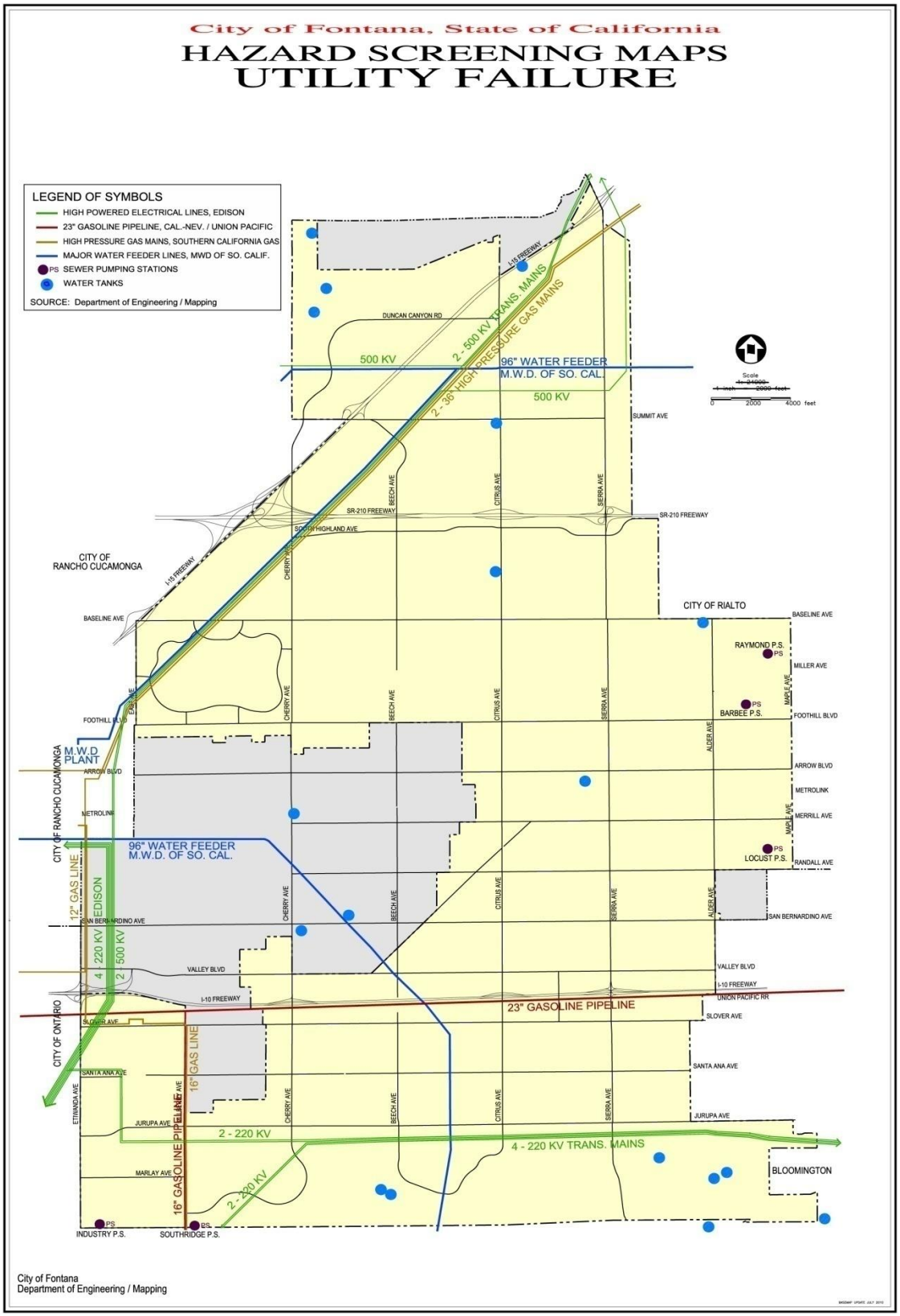
Map 3: City of Fontana HazMat Release



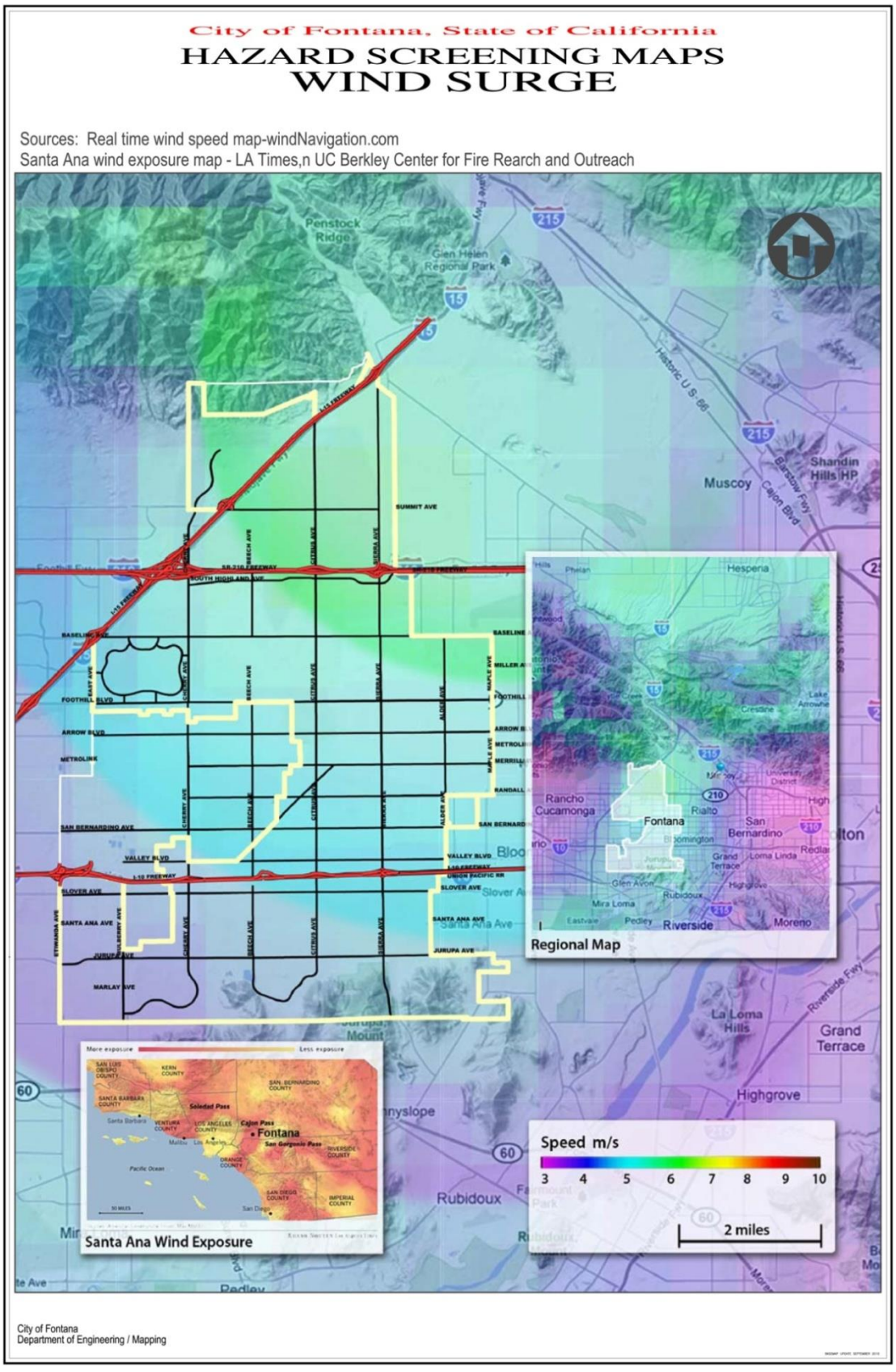
Map 4: City of Fontana Train Derailment



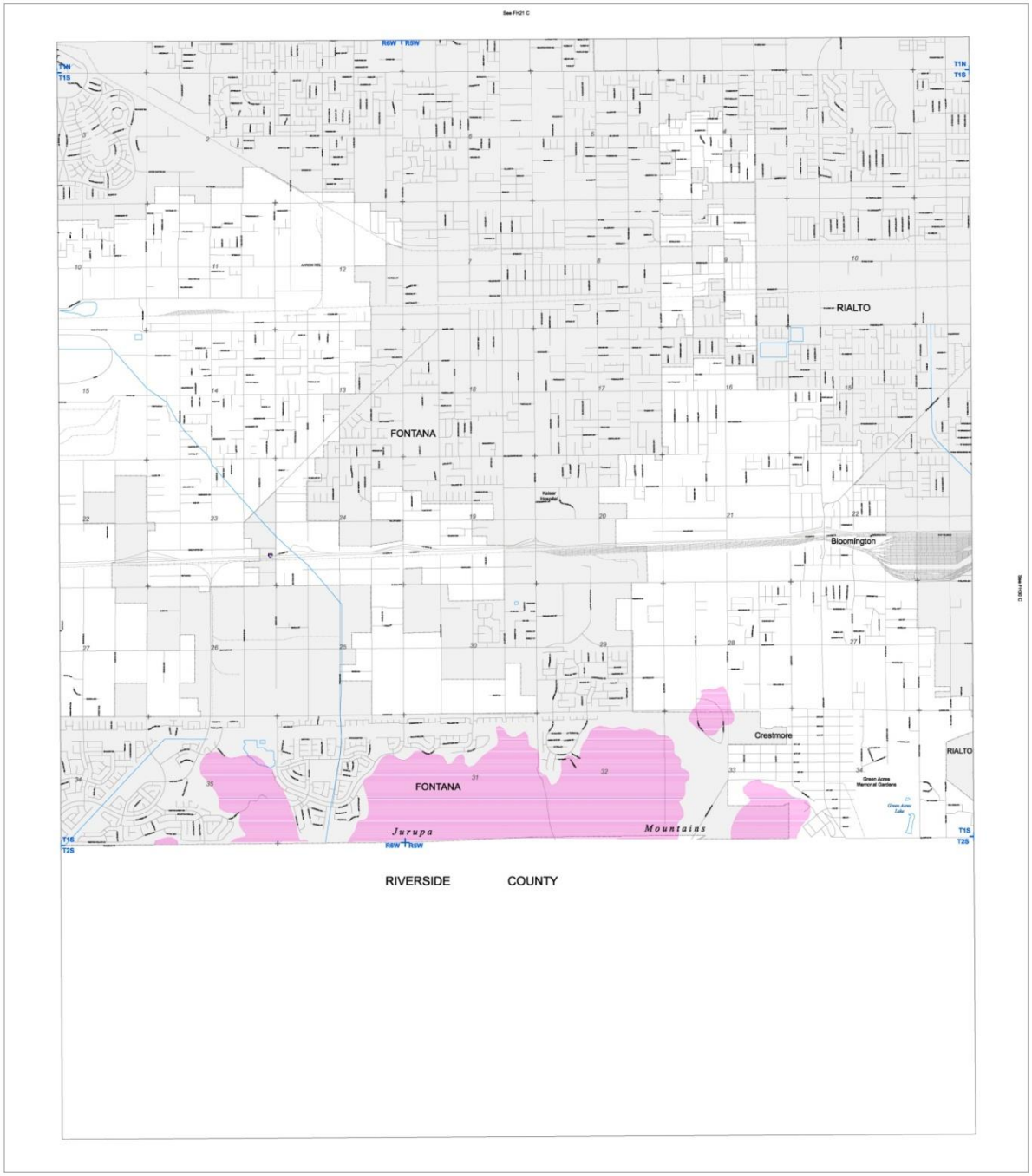
Map 5: City of Fontana Utility Failure



Map 6: City of Fontana Wind Surge



Map 7: Geologic Hazard Overlays – Landslide & Liquefaction Susceptibility (South)



San Bernardino County Land Use Plan
GENERAL PLAN
Geologic Hazard Overlays

Generalized Landslide Susceptibility
- Low to moderate
- Moderate to high
- Mapped, Existing Landslide
- Rockfall/Debris-Flow Hazard Area (Forest Falls Only)

Map data originally compiled on 1:48,000 scale mosaicked maps photo-reduced from 7-1/2 minute USGS quads by D.M. Morton, U.S. Geological Survey, 1974 and by S.S. Tan, State Division of Mines and Geology, 1989.

Positional accuracy of map data is at best plus or minus 150 feet.

Generalized Liquefaction Susceptibility
- Low
- Medium
- High

Map data originally compiled on 1:48,000 scale mosaicked maps photo-reduced from 7-1/2 minute USGS quads by J.E. Matti and S.E. Carson, 1986.

Positional accuracy of map data is at best plus or minus 150 feet.

Earthquake Fault Zones
- Earthquake Fault Zone Boundary
- County Designated Fault Zones

Map data compiled on 7-1/2 and 15-minute USGS quadrangle maps by the State of California, Division of Mines and Geology, 1987.

Positional accuracy of map data is at best plus or minus 150 feet.

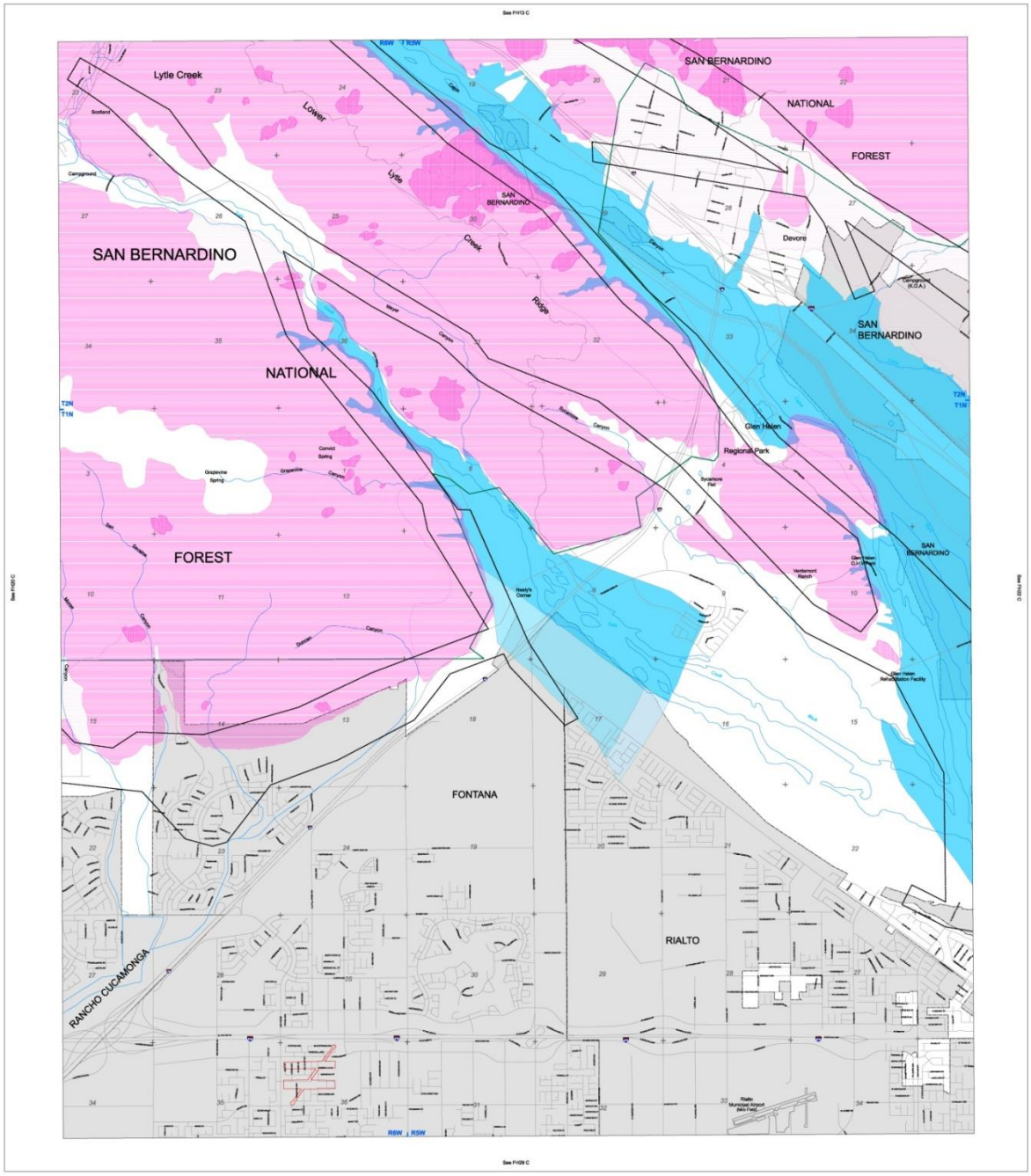
NOTICE:
Effective January 1, 1994, the name "Special Studies Zones" has been changed to "Earthquake Fault Zones" and Chap. 7.5, Div. 2, of the Public Resources Code has been renamed the "Alquist-Priolo Earthquake Fault Zoning Act."

SAN BERNARDINO COUNTY
MAP LOCATION

Cities

FH29 C
Fontana

Map 8: Geologic Hazard Overlays – Landslide & Liquefaction Susceptibility (North)



Generalized Landslide Susceptibility
- Low to moderate
- Moderate to high
- Mapped, Existing Landslide
- Rockfall/Debris-Flow Hazard Area (Forest Falls Only)

Map data originally compiled on 1:48,000 scale mosaicked maps photo-reduced from 7-1/2 minute USGS quads by D.M. Morton, U.S. Geological Survey, 1974 and by S.S. Tan, State Division of Mines and Geology, 1999.

Positional accuracy of map data is at best plus or minus 150 feet.

Zone of Suspected Liquefaction Susceptibility
- Zone of Susceptibility

The Zone of Suspected Liquefaction Susceptibility layer compiled by the San Bernardino County Geologist, 2009

Positional accuracy of map data is at best plus or minus 200 feet.

San Bernardino County Land Use Plan
GENERAL PLAN
Geologic Hazard Overlays

SCALE 1:14,400

Generalized Liquefaction Susceptibility
- Low
- Medium
- High

Map data originally compiled on 1:48,000 scale mosaicked maps photo-reduced from 7-1/2 minute USGS quads by J.E. Matti and S.E. Carson, 1986.

Positional accuracy of map data is at best plus or minus 150 feet.

Earthquake Fault Zones
- Earthquake Fault Zone Boundary
- County Designated Fault Zones

Map data compiled on 7-1/2 and 15-minute USGS quadrangle maps by the State of California, Division of Mines and Geology, 1997.

Positional accuracy of map data is at best plus or minus 150 feet.

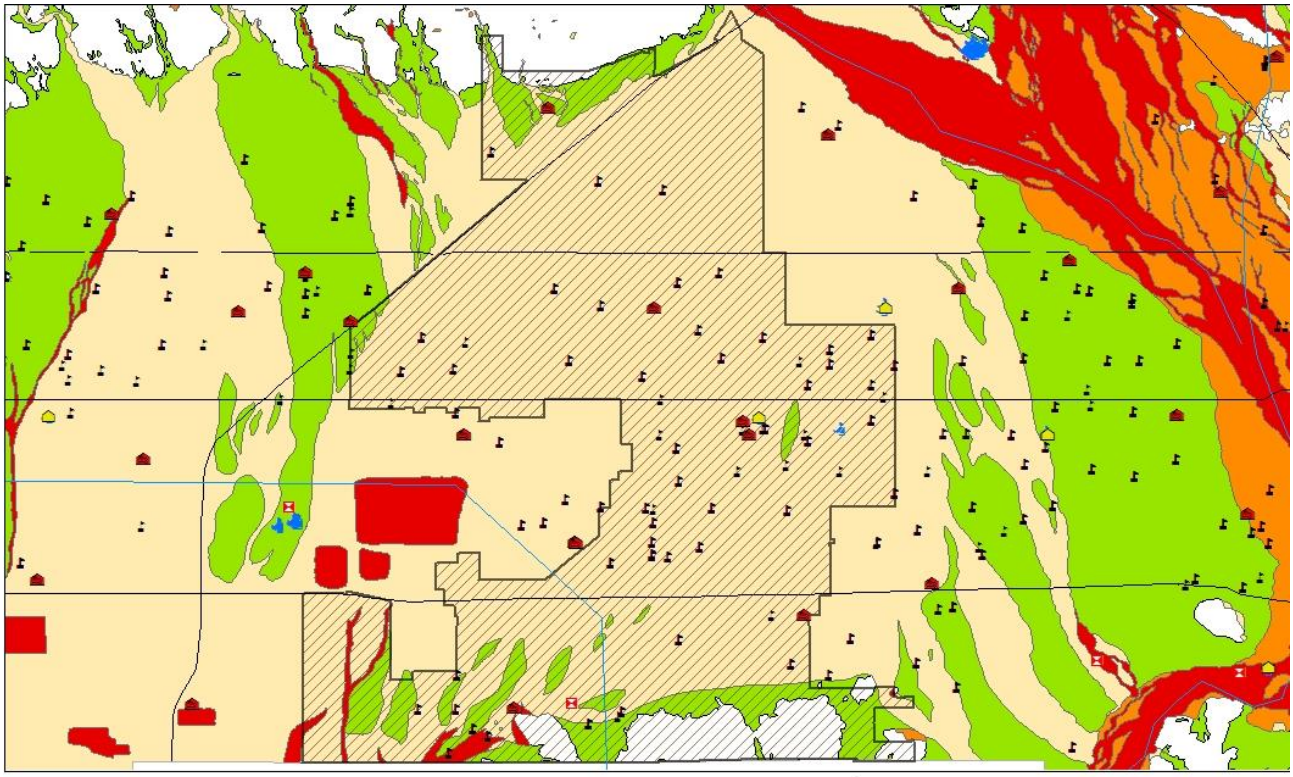
NOTICE:
Effective January 1, 1994, the name "Special Studies Zones" has been changed to "Earthquake Fault Zones" and Chap. 7.5, Div. 2, of the Public Resources Code has been renamed the "Alquist-Priolo Earthquake Fault Zoning Act."

SAN BERNARDINO COUNTY MAP LOCATION

Cities

FH21 C
Devore

Map 9: USGS Liquefaction Susceptibility Zones



APPENDIX G
LAND USE / TRANSPORTATION ALTERNATIVES

BRIEFING BOOK



Land Use / Transportation Alternatives

Land Use / Transportation Alternatives

The way in which a city allocates its land to meet the needs of residents and businesses is central to the General Plan Update. California Environmental Quality Act (CEQA) guidelines require the identification and comparative evaluation of reasonable planning alternatives that each achieve the objectives of the project while lessening environmental effects. This document is a moment along the way to the creation of the General Plan Update in which the planning team has examined three potential plans to accommodate the anticipated growth of Fontana. This briefing contains the plan's guiding principles, project growth and development potential, a description of the proposed Walkable Mixed Use definitions, and concludes with a comparison of the alternatives.

A

Summary

The City of Fontana is preparing an update to the General Plan and Environmental Impact Report (EIR) together with implementing zoning and a downtown plan. The general plan, zoning update, and downtown plan refocuses the city's long range planning vision through a 20-year planning horizon (henceforth referred to as the year 2036). Stantec was retained to provide professional consulting services to lead this effort. A General Plan Advisory Committee (GPAC) was subsequently appointed by the City Council and the Mayor to work with and advise the planning staff and consultants in this effort to formulate a general plan update.

"Land use" is an umbrella term for the activities that actually occur on a given parcel of land, such as residential, retail, industrial, agricultural, or transportation uses. Land uses can change over time–for example, when a farm becomes fallow land and then is turned into a residential subdivision. Zoning is the tool that a local government uses to regulate the uses of the land, but land use and zoning are not identical.



Community members commenting on future land uses

Research, information gathering, community engagement, and expert interviews have been underway for more than a year. Using information provided by studies, GPAC meetings, and community input, the planning team formulated three conceptual alternatives (identified as A, B, and C) reflecting a range of land uses and intensity allocations to accommodate the projected population and employment growth through the year 2036.

B

Vision and Guiding Principles

Since the Fontana Forward General Plan Update process began in 2015, the planning team has heard from residents, business owners, and others with a stake in Fontana's future about what they would like Fontana to be like 20 years from now. Starting in fall 2015, the planning team sought public comment on a proposed citywide vision, goals, and strategies to achieve the vision. The final proposed plan will include a land use plan, recommendations on health and wellness, housing, parks, transportation and mobility, and economic development, as well as a Downtown Area Plan designed to reimagine downtown as a vibrant place to live, shop, work, and play.

Vision

IN 2035... Fontana is the Inland Empire's opportunity city. With welcoming neighborhoods, diverse job opportunities and housing choices, excellent parks, and a lively downtown, we are prosperous, safe, healthy, and thriving. Once a pioneer community, an agricultural center, a steeltown, and a bedroom community, Fontana has built its fifth identity as a live-work-play-learn city of opportunity where families, young adults, and older residents can all flourish: Fontana 5.0.



Fontana has excellent school systems and recreational opportunities

Fontana welcomes everyone and offers a high quality of life. Our housing stock meets the needs of families and individuals at every stage of life and all income levels: in traditional single-family neighborhoods, walkable mixed-use neighborhoods with housing and shops, senior-oriented developments, and a city core that combines revitalized historic neighborhoods with newer townhouses, condos and apartments. Residents have many in-town options for entertainment and shopping, including locally-owned independent businesses. Excellent school systems and recreational opportunities attract new residents.

Fontana embraces lifelong learning. Our community promotes and supports educational achievement to create a highly qualified work force for 21st-century jobs. Working with our schools and educators, our civic partnership of government, business, nonprofits, human services organizations, and faith-based organizations has made Fontana a leader in educational achievement.

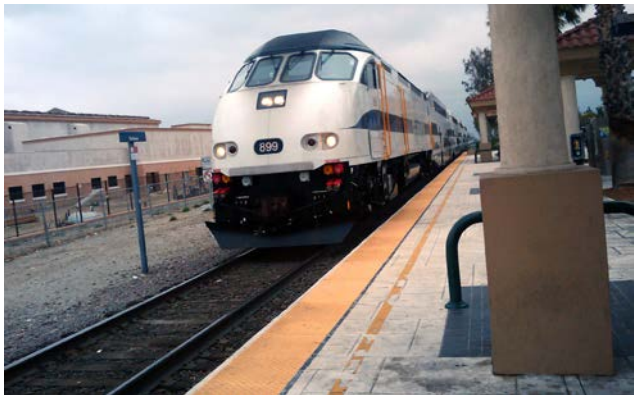
Our diversified economy has good jobs for Fontana residents, so they can

work where they live. We partner with major employers to connect Fontanans to local jobs and encourage employees to live in Fontana. Our business-friendly policies help small businesses and start-ups thrive. Our location on three interstate highways, freight and commuter rail, and bus rapid transit helps Fontana attract new businesses while continuing to support our health care, services, manufacturing, and logistics industries.

Our system of parks and natural open spaces, community centers, and recreational opportunities is second to none in the Inland Empire. Residents throughout the city have easy access to state-of-the-art facilities and a broad array of athletic and recreational activities in well-maintained parks, as well as trails for nature recreation in protected open spaces. Our park system is fully connected by a network of safe and attractive walking and biking routes for children, youth, and older residents.

Our revitalized downtown is a neighborhood, an arts, culture and entertainment center, and a walkable district of shopping and services. Downtown's renaissance is anchored by new residents who want to live in a walkable center close to amenities, activities, and transportation options.

We take advantage of more transportation choices: we can walk and bike to nearby parks, schools and stores, use transit and ride sharing, and drive longer distances as needed. Safe, convenient, and comfortable transportation choices connect us to community destinations and contribute to physical health, access to jobs and activities, and better air quality.



Fontana has transportation choices connected to community destinations

We have become one of the healthiest and most sustainable cities in San Bernardino County. We have taken many steps to improve our health indicators, which meet and increasingly surpass state averages. Our local infrastructure is resource-efficient and well-maintained. We work with our water and energy providers to establish the highest possible levels of resource conservation and efficiency, and we are working toward becoming a "net-zero energy" city—producing more energy than we consume.

Fontana 5.0 is a complete and flourishing community of opportunity—with excellent quality of life and city services, high educational achievement and jobs for Fontana residents, transportation choices to connect city destinations, and local entertainment centers. Fontana's opportunities attract new residents, support successful businesses, and encourage empty nesters to stay and their children to settle in their home town.

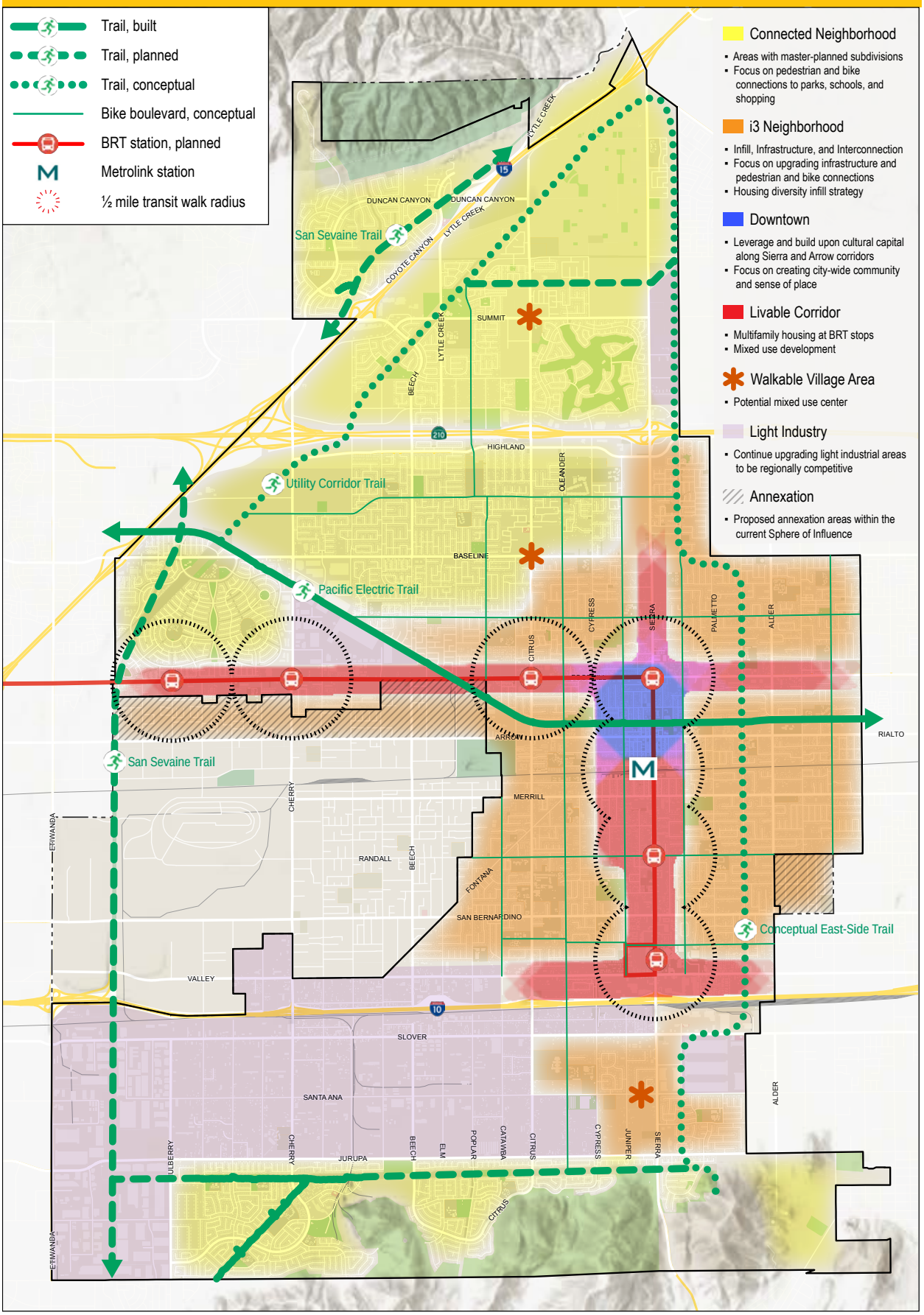
Guiding Principles

Since the Fontana Forward General Plan Update process began in 2015, we've heard from residents, business owners, and other people with a stake in Fontana's future about what they would like Fontana to be like 20 years from now. Starting in fall 2015, the planning team sought public comment on a proposed citywide vision, goals, and strategies to achieve the vision. The plan will include a land use plan, recommendations on health and wellness, housing, parks, transportation and mobility, and economic development, as well as a Downtown Area Plan designed to reimagine downtown as a vibrant place to live, shop, work, and play.

TABLE **GUIDING PRINCIPLES**

	**Prepare students for good jobs.** Establish a citywide focus on educational achievement to create a skilled and well-educated workforce.
	**Pursue high-quality development.** Make public investments a model of excellent design and maintain high-quality design standards for new development.
	**Connect people and places.** Provide safe and efficient transportation choices, including pedestrian, bicycle, and transit opportunities, along with well-maintained streets, to connect people to city destinations.
	**Make healthy lifestyles easy and fun.** Create policies and physical conditions that promote healthy lifestyles through easy access to physical activity, healthy food, and medical care.
	**Pursue sustainability and resilience.** Make resource-efficient choices to conserve water, energy, and materials, improve air quality, and adjust to changing conditions.
	**Ensure fairness and opportunity for all parts of the city.** Make every neighborhood a "neighborhood of choice" with excellent infrastructure, services and amenities.
	**Be cost-effective.** Establish cost-effective best practices and systems to support ongoing city services and infrastructure.
	**Be business-friendly.** Support business growth and entrepreneurship while protecting environmental resources and quality of life.
	**Act transparently.** Promote civic engagement and keep everyone informed about community conditions, options, and opportunities to participate in decision making.
	**Pursue goals through partnerships.** Connect city government with businesses, institutions, regional agencies, nonprofits, and citizens to accomplish goals.

EXHIBIT **STRATEGIC POLICY MAP**



C

Alternatives

The three alternatives are as follows:

Alternative	DESCRIPTION
Alternative A “No Project”	• The no-change alternative. It is the continued implementation of the 2003 General Plan. • The planning team does not recommend the No Project alternative because the land use vision in the 2003 plan is out of date and does not anticipate the current and future needs of the city.
Alternative B “Proposed Plan”	• Focuses on the re-building of Historic Route 66 (Foothill Boulevard) and the downtown into mixed use centers with walkable neighborhoods. • The Proposed Plan provides a community-based foundation that captures the City’s qualities, values, and characteristics, now and in the future. • The Proposed Plan balances the needs of city residents with environmental impacts.
Alternative C “Compact Scenario”	• A variation of the Proposed Plan with higher residential density within walking distance of existing and proposed mass transit stations. • This alternative responds to CEQA’s requirement that an “Environmentally Superior Alternative” must be identified among those considered. To address this requirement, the Compact Scenario was designed to result in the fewest environmental impacts. • This alternative presents certain drawbacks discussed later in this briefing, and is therefore not recommended.

WALKABLE MIXED USE (WMXU)

The two proposed WMXU land use definitions respond to stakeholder input and are designed to promote pedestrian- and bicycle-friendly development, increase housing diversity, increase transit use, and ensure economic vitality in the downtown and along important corridors. Furthermore, WMXU definitions encourage infill development on vacant parcels and enhance community character. WMXU is proposed to provide flexibility in zoning and development in the following geographic areas:

- Fontana's downtown and on vacant and underutilized lots in adjacent areas
- Along the Sierra and Foothill corridors with planned Bus Rapid Transit (BRT) stops
- Along Valley Boulevard around the intersection with Sierra Avenue
- At and near key intersections where new housing development could be designed to allow safe and convenient walking to nearby shopping or neighborhood destinations like schools and parks.



Fontanans gathering for a public event

The "walkable" meaning of this land use category is that it is structured by the walking distance radius from destinations like the civic center, downtown attractions, shopping and restaurants, the planned BRT stops, and neighborhood destinations.[1]

The **WMXU-1** definition is organized around walking access to downtown and along Fontana's three underutilized corridors: Foothill Boulevard, Sierra Avenue within Central Fontana, and Valley Boulevard centered around the Sierra intersection. This land use category provides the opportunity for a combination of commercial development and well-designed multi-family housing to support that development. The mixture of uses can be "vertical" – housing or offices above ground floor commercial development – or "horizontal," where housing and commercial uses could be located adjacent to one another. Zoning consistent with the purpose of WMXU-1 should include design requirements for a compatible mixture of uses and densities in this area and should ensure that a proper transition in density occurs adjacent to streets with single-family houses.

The **WMXU-2** definition is for new neighborhoods to facilitate walking to shopping (which may be part of a development) or to destinations like parks and schools within walking distance. These areas will use design strategies rather than walls to connect to streets and adjacent development. The neighborhoods

EXHIBIT **ALTERNATIVE A "NO PROJECT"**

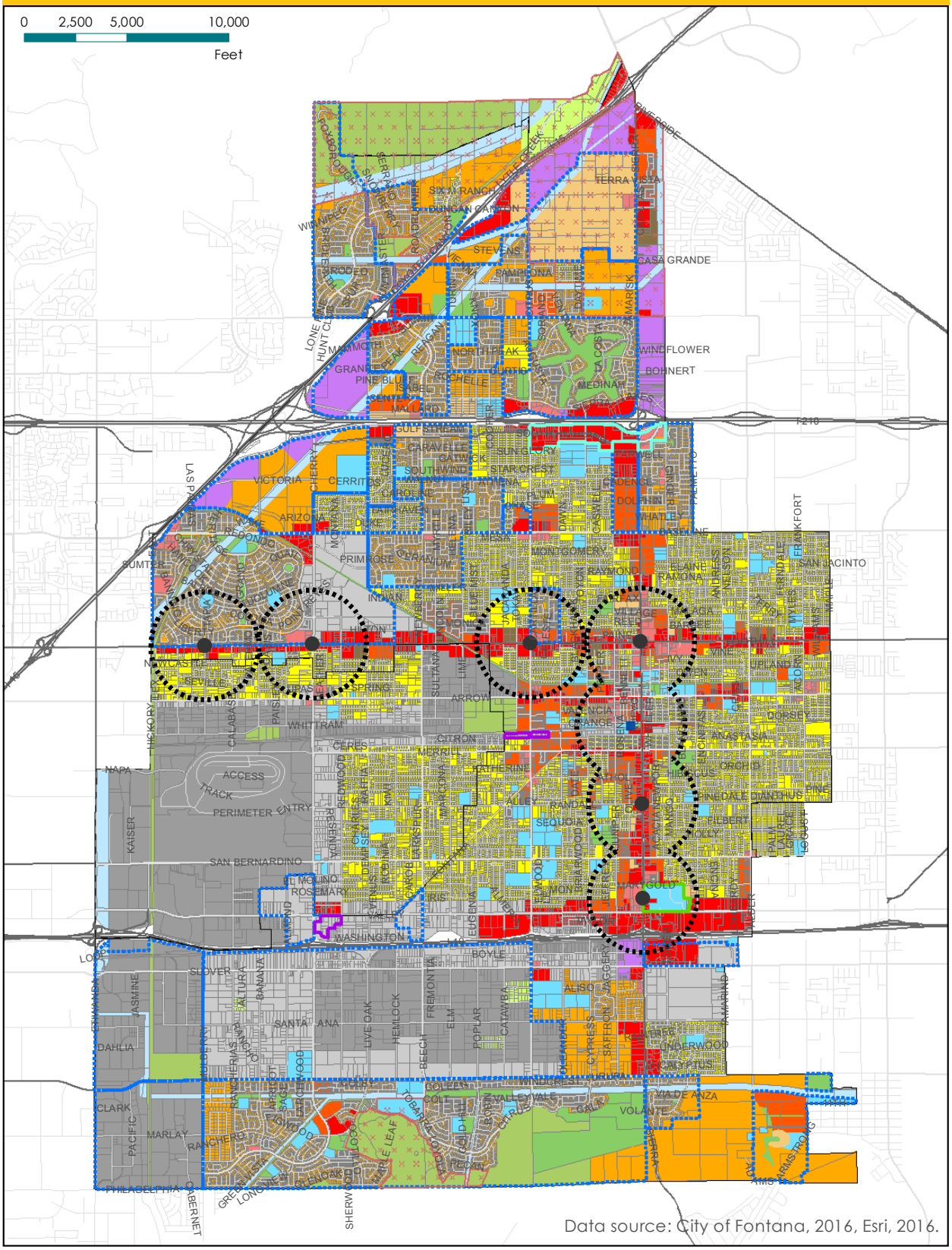
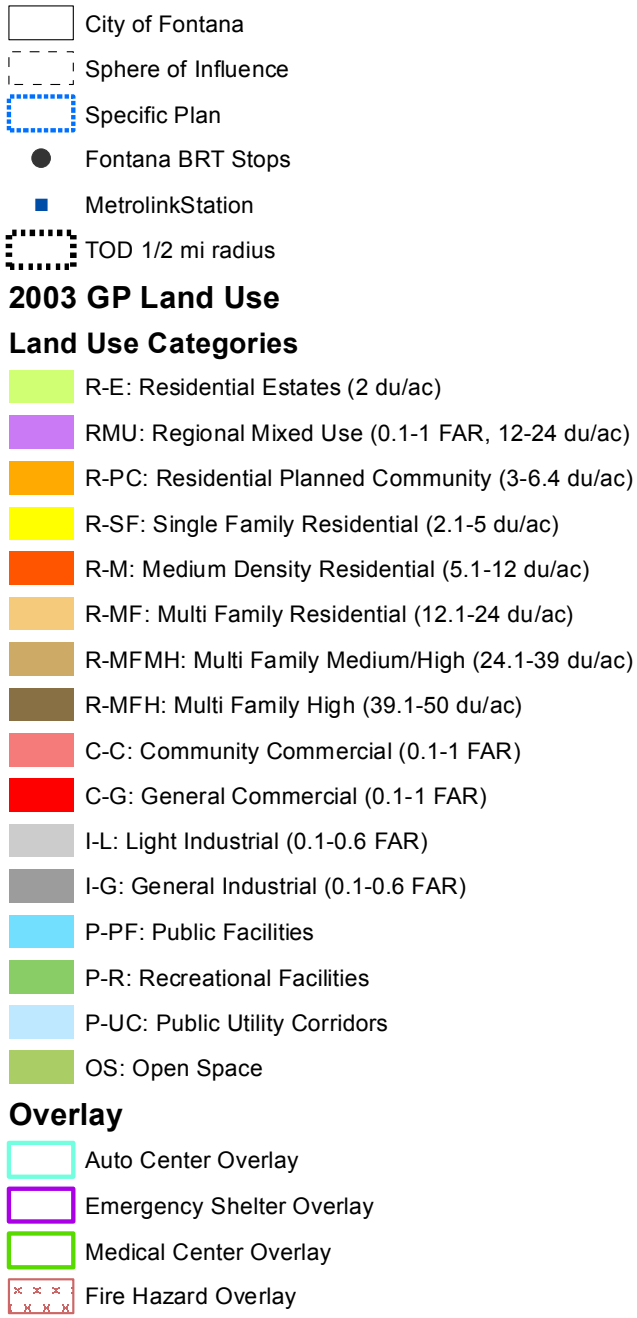


EXHIBIT LEGEND **ALTERNATIVE A "NO PROJECT"**



can also have a mixture of housing densities and open spaces, so that there are appropriate transitions between different housing types such as multi-family, townhouses, single-family houses, and commercial areas.

In the **Proposed Plan** alternative, the WMXU-1 density range is 3.0-39.0 dwelling units per acre (du/ac) and 0.2-2.0 floor area ratio (FAR) and the WMXU-2 density range is 2.1-24.0 du/ac and 0.1-1.0 FAR. By matching Fontana's Multi-Family Medium/High Residential density, WMXU-1 land use fits the surrounding land uses without disrupting existing stakeholders.

In the **Compact Scenario**, the WMXU-1 maximum density is increased to 50 du/ac and 3.0 FAR to offer an environmentally superior alternative to the Proposed Plan. However, the Compact Scenario is not the recommended alternative from a community perspective because the increase in density would not be in keeping with the character of the existing land uses within the WMXU-1 area and surrounding areas.

EXHIBIT **ALTERNATIVE B "PROPOSED PLAN"**

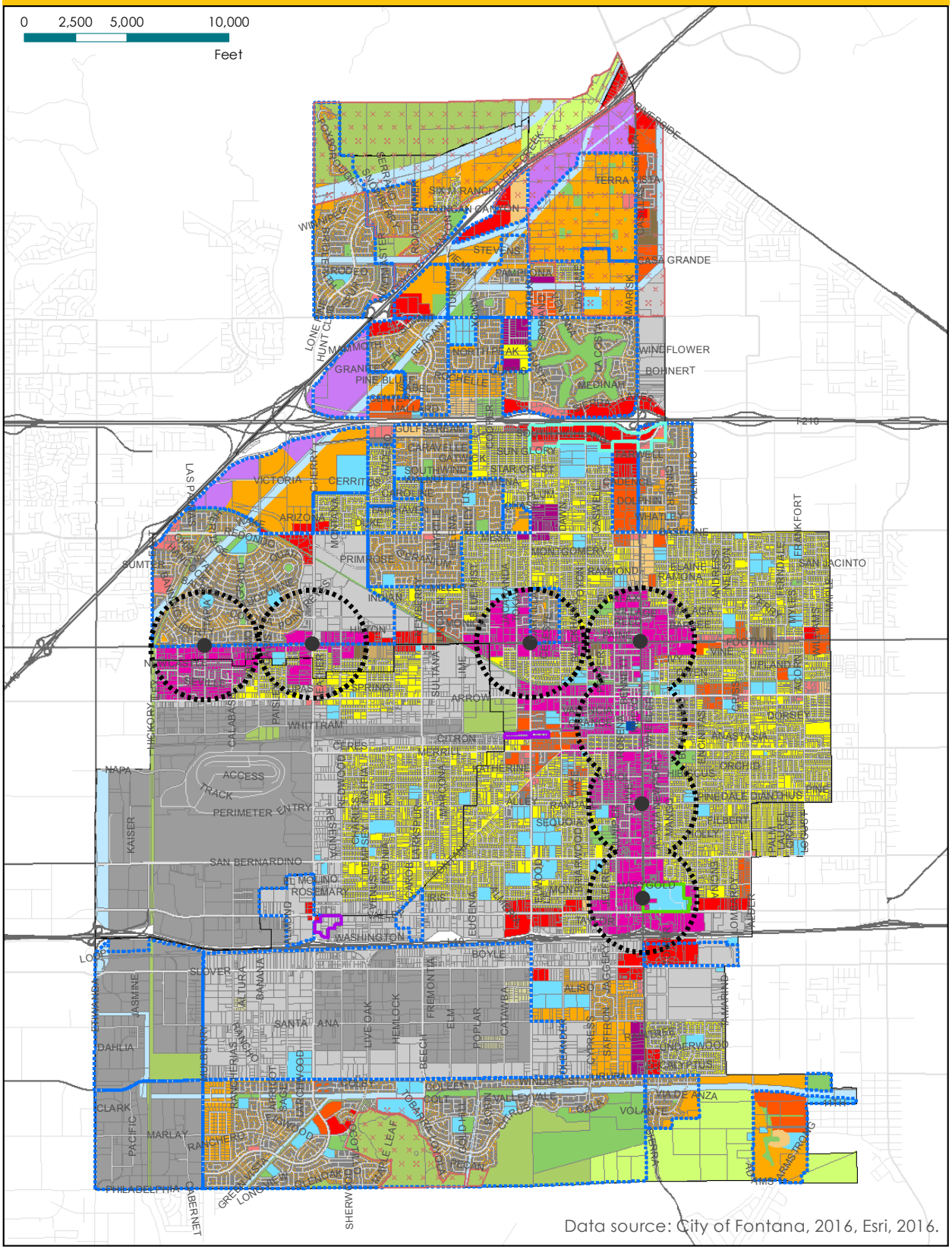
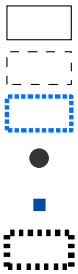


EXHIBIT LEGEND **ALTERNATIVE B "PROPOSED PLAN"**



City of Fontana
Sphere of Influence
Specific Plan
Fontana BRT Stops
MetrolinkStation
TOD 1/2 mi radius

Proposed Land Use

Existing Land Use Categories

R-E: Residential Estates (2 du/ac)
RMU: Regional Mixed Use (0.1-1 FAR, 12-24 du/ac)
R-PC: Residential Planned Community (3-6.4 du/ac)
R-SF: Single Family Residential (2.1-5 du/ac)
R-M: Medium Density Residential (5.1-12 du/ac)
R-MF: Multi Family Residential (12.1-24 du/ac)
R-MFMH: Multi Family Medium/High (24.1-39 du/ac)
R-MFH: Multi Family High (39.1-50 du/ac)
C-C: Community Commercial (0.1-1 FAR)
C-G: General Commercial (0.1-1 FAR)
I-L: Light Industrial (0.1-0.6 FAR)
I-G: General Industrial (0.1-0.6 FAR)
P-PF: Public Facilities
P-R: Recreational Facilities
P-UC: Public Utility Corridors
OS: Open Space

Proposed Land Use Categories

R-T: Residential Trucking (2 du/ac)
WMXU-1: Walkable Mixed Use Corridor and Downtown (0.2-2 FAR, 3-39 du/ac)
WMXU-2: Walkable Mixed Use Urban Village (0.1-1 FAR, 2.1-24 du/ac)

Overlay

Auto Center Overlay
Emergency Shelter Overlay
Medical Center Overlay
Fire Hazard Overlay

D

Projected Growth and Development Potential

All three alternatives have the capacity to accommodate Fontana's growth of new residential units and employment opportunities through the end of the planning horizon. While each alternative arranges the forecasted growth in a different pattern, the forecasted growth could be accommodated in any of the alternatives. No alternative calls for expansion into the sphere of influence (SOI) to accommodate the forecasted growth.



Fontana is projected to grow by 17,200 households in the coming twenty years

Fontana's population in 2036 is forecasted to be 269,066 people in 70,560 households, which is an increase from the 2016 population by almost 60,000 people, or about 17,200 households.[2] The planning team used the San Bernardino Transportation Analysis Model (SBTAM)[3] to validate the No Project and the Proposed Plan alternatives. The model's results demonstrate that the development potential of each alternative land use plan could accommodate the forecasted growth. Furthermore, the model's results demonstrate that the traffic generated by both alternatives is consistent with the growth projections of the SBTAM, and that the Proposed Plan reduces the amount of vehicle-miles-traveled by Fontana residents and workers by approximately 11% in comparison to the No Project alternative. The Compact Scenario alternative represents an additional increase in development potential due to allowable higher density development.

E

Comparative Analysis of the Alternatives

The following table contains a comparison of the three land use plan alternatives in housing, economic, transportation, and environmental terms:

TABLE **COMPARATIVE ANALYSIS**

TYPE	*A. NO PROJECT*	*B. PROPOSED PLAN*	*C. COMPACT SCENARIO*
Growth forecast to 2036 (number of households)	70,560	70,560	70,560
Development potential (number of households)	74,010	81,760	More than 81,760
Employment potential (number of jobs)	90,054	99,129	More than 99,129
Daily Total Trips (number)	935,523	932,748	Not modeled
Daily Total vehicle miles traveled (miles)	12,880,405	12,750,434	Not modeled
Daily vehicle miles traveled per capita[4] (miles)	34.7	30.7	Less than 30.7
Mobility and transportation	No change	Increase in walkable neighborhoods and transit oriented development	Increase in walkable neighborhoods and transit oriented development
Air quality	No change	Improved due to lower per capita vehicle miles traveled	Improved due to lower per capita vehicle miles traveled

Early modeling results demonstrate that the Proposed Plan is environmentally and economically superior to the No Change alternative. The EIR process will continue evaluating the alternative land uses in greater detail.

Notes

1 The maximum distance people are willing to walk on a regular basis is ½mile or ten minutes--as long as they experience the walk as safe, comfortable, and convenient.

2 Per the Southern California Association of Governments (SCAG) 2016-2040 Demographics & Growth Forecast report (2015), Fontana's population is expected to grow by 20,642 house-holds (71,005 people) between 2016 and 2040. Using this forecast, the planning team dis-counted this forecast to come up with an estimate for 2036, the end of the planning horizon. The SCAG forecast does not include population within the SOI. Their methodology assumes that household size will decline somewhat to 3.8 persons from 4.1 persons.

3 San Bernardino Associated Governments (SANBAG) is responsible for the development, maintenance, and application of the SBTAM. Read more about the model here: http://www.sanbag.ca.gov/planning2/transportation-modeling.html

4 Per capita estimate based on service population (defined as city population plus employment) and includes all trips (including truck trips) that begin or end at a location within Fontana.